SERVICE MANUAL

COMPACT DISC PLAYER

SANSUI CD-X701

Sansui

SANSUI ELECTRIC CO., LTD.

•SPECIFICATIONS

Format ..... Compact disc, digital audio
Pick-up ..... 3-beam, semiconductor laser
No. of channels ..... 2 channels (stereo)
Decoding (D/A) ..... 16-bit linear
Frequency response ..... 2 Hz ~ 20 kHz ±0.3 dB
Total harmonic distortion
..... Less than 0.002% (1 kHz)
Signal-to-noise ratio (S/N)
..... Better than 100 dB
Dynamic range ..... Better than 96 dB
Wow and flutter ..... Below measurable limit
Output voltage/load impedance
Normal output (OUTPUT-1)
..... 2V/5 kohms
Balanced output (OUTPUT-2)
..... 2V/600 ohms
Headphones ..... 45 mW (variable maximum)/ with 32-ohm load
Power requirements ..... AC 120V/220V/240V, 50/60 Hz
For U.S.A. & Canada ... AC 120V, 60 Hz
Power consumption ..... 25 watts
Dimensions ..... 448 mm (17-11/16″) W
98 mm (3-7/8″) H
380 mm (15″) D
Weight ..... 8.8 kg (19.4 lbs) net

Remote controller: RS-1010

Control system ..... Infra-red ray pulse system
Power requirements ..... DC 3V
Dimensions ..... 63 mm (2-1/2″) W
18 mm (3/4″) H
175 mm (6-15/16″) D
Weight ..... 126 g (0.3 lbs) including dry batteries

* Design and specifications subject to changes without notice for improvements.
* Due to local laws and regulations, this unit sold in some areas are not equipped with variable voltage selecltors.

NOTE

1. The symbols, UL, CSA, SA, BS, UK, EU, AS, SEV, XX <EXPORT> and XX-V <EXPORT(V)> on the parts list and the schematic diagram mean followings respectively.

   UL..... Manufactured for U.S.A market. (Underwriters Laboratories approved model.)
   CSA ..... Manufactured for Canadian market.
   SA..... Manufactured for South African market.
   BS, UK..... Manufactured for United Kingdom market.
   EU..... Manufactured for European market.
   AS..... Manufactured for Australian market.
   SEV..... Manufactured for Swiss market.
   XX..... Standard Version with Inner Voltage <EXPORT> Selector.
   XX-V..... Standard Version with Outer Voltage <EXPORT(V)> Selector.
   NON MARK..... Common Parts.

2. Some printed circuit boards are not supplied assembled. To separate these in this service manual, the stock numbers are not indicated for these boards. However, stock numbers for individual parts are indicated.

3. Since some capacitors and resistors are omitted from parts lists in this service manual, refer to the Common Parts List for capacitors and resistors, which was issued on February 1983.

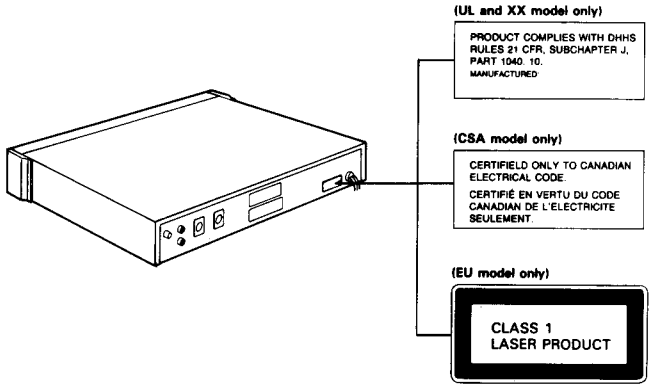
4. Abbreviations in this service manual are as follows.

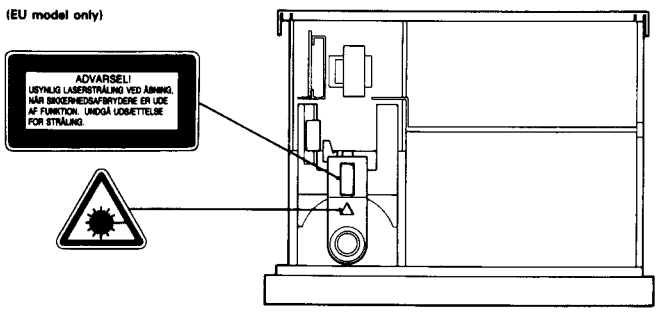
•Abbreviations List

C.R.	: Carbon Resistor
S.R.	: Solid Resistor
Ce.R.	: Cement Resistor
M.R.	: Metal Film Resistor
F.R.	: Fusing Resistor
N.I.R.	: Non-Inflammable Resistor
A.R.	: Array Resistor
C.C.	: Ceramic Capacitor
C.T.	: Ceramic Capacitor, Temperature Compensation
E.C.	: Electrolytic Capacitor
E.L.	: Low Leak Electrolytic Capacitor
E.B.	: Bi-Polar Electrolytic Capacitor
E.B.L.	: Low Leak Bi-Polar Electrolytic Capacitor
Ta.C.	: Tantalum Capacitor
F.C.	: Film Capacitor
M.P.	: Metalized Paper Capacitor
P.C.	: Polystyrene Capacitor
G.C.	: Gimmic Capacitor
A.C.	: Array Capacitor
V.R.	: Variable Resistor
S.V.R.	: Semi Variable Resistor
SW.	: Switch
Chip R.	: Chip Resistor
Chip C.	: Chip Capacitor

Cautions Concerning Handling of The Laser

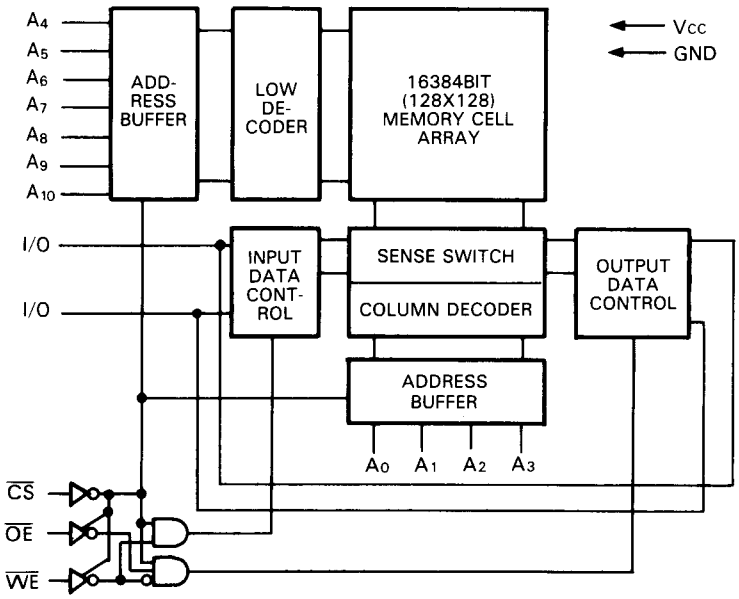
The following label has been affixed to the unit, listing the proper procedure for working with the laser beam.

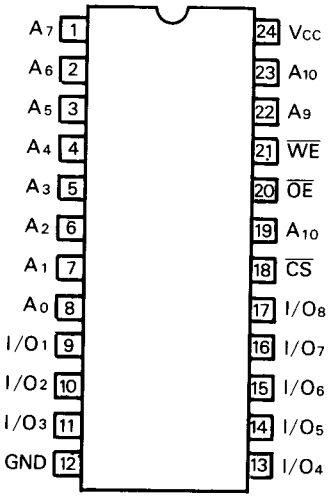

(UL and XX model only)
PRODUCT COMPLIES WITH DHHS RULES 21 CFR, SUBCHAPTER J, PART 1040. 10.
MANUFACTURED
(CSA model only)
CERTIFIELD ONLY TO CANADIAN ELECTRICAL CODE.
CERTIFIÉ EN VERTU DU CODE CANADIAN DE L'ELECTRICITE SEULEMENT.
(EU model only)
CLASS 1
LASER PRODUCT


(EU model only)
ADVARSEL!
USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.

2. INTERIOR BLOCK DIAGRAM & TERMINAL FUNCTION OF IC

•MSM5128-15RS/HM6116P-4/MB8416-20/μPD446C-2/CXK5816P/TC5517AP-2 (RAM)





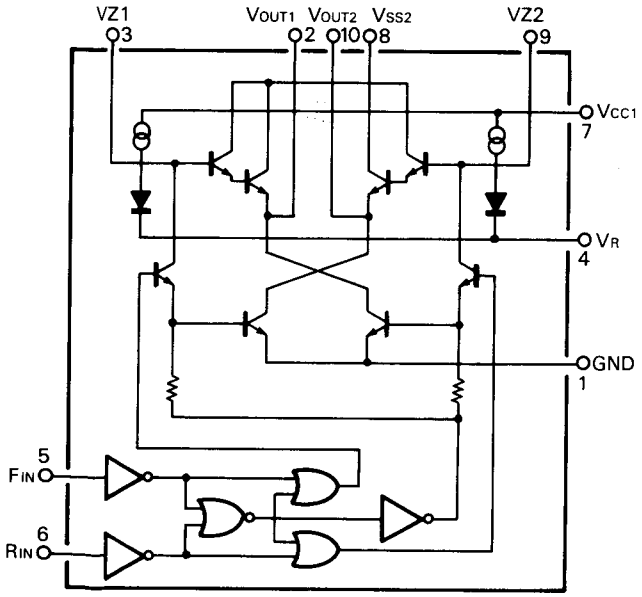
A0 ~ A10: Address Input
I/O1 ~ I/O8: Data Input
CS: Chip Select Input
WE: Write Enable Input
OE: Output Enable Input
Vcc: +5V Power Supply
GND: Ground

<Action Mode>

CS	OE	WE	CHIP	OUTPUT MODE	CURRENT
H	X	X	Non Select	High Impedance	ICCS
L	H	H			
L	L	H	Read	DOUT	ICCA
L	X	L	Write	DIN	

H: High Level
L: Low Level
X: High or Low Level

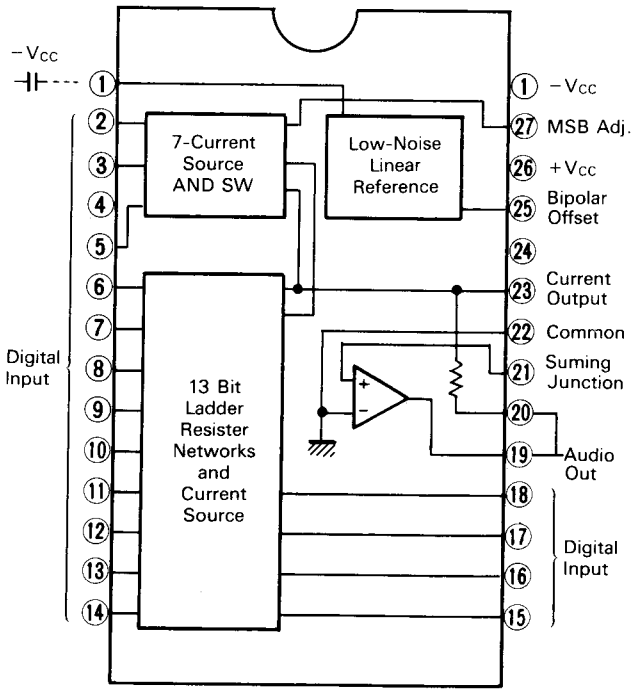
•BA6109 (Motor Driver)



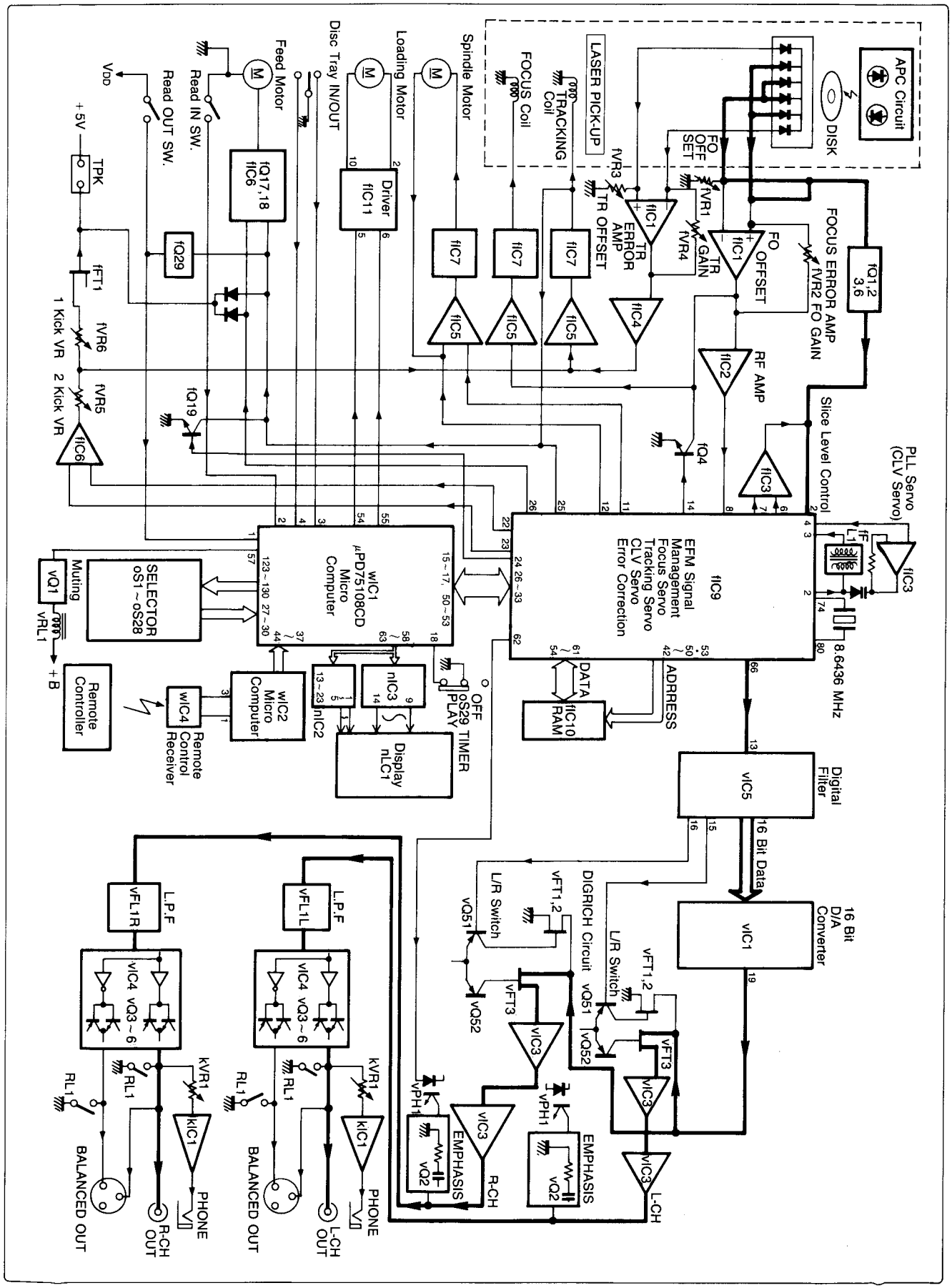
FIN	RIN	Vout 1	Vout 2
1	1	L	L
0	1	L	H
1	0	H	L
0	0	L	L

Input level 1 = 2.0V or more
Input level 0 = 0.7V or less

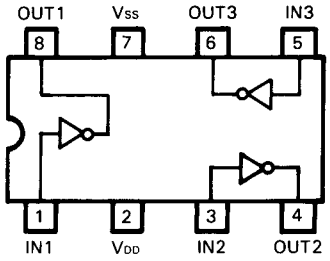
•PCM54JP (16 bit D/A Converter)



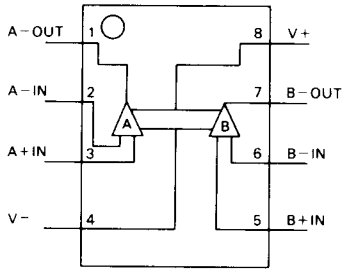
1. BLOCK DIAGRAM



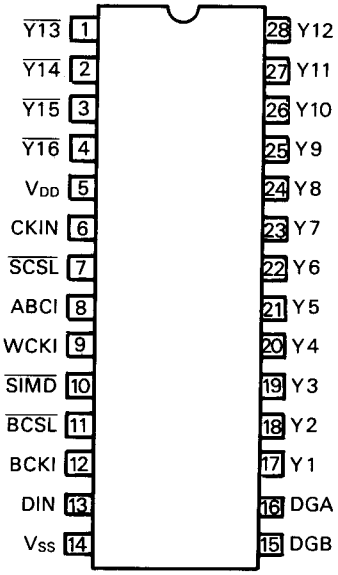
•LC4969 (3 Circuit Inverter)

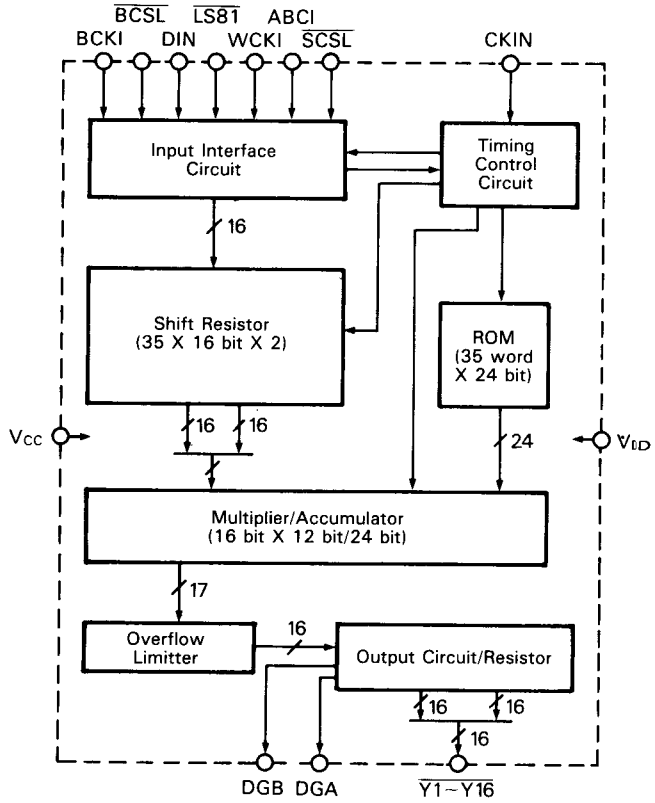


•M5218L/M5216L/M5219/M5238 (Op Amp.)



•SM5806P (Twice Over Sampling Digital Filter)





<Function>

Pin	Name	I/O	Description
1	$\overline{Y13}$	O	PARALLEL DATA INVERTED OUTPUT
2	$\overline{Y14}$	O	PARALLEL DATA INVERTED OUTPUT
3	$\overline{Y15}$	O	PARALLEL DATA INVERTED OUTPUT
4	$\overline{Y16}$	O	PARALLEL DATA INVERTED OUTPUT
5	VDD	—	Power Supply
6	CKIN	I	System Clock Input
7	$\overline{SCSL}$	Ip	"H" = System Clock 96 fs "L" = System Clock 98 fs
8	ABCI	Ip	44.1 kHz SYNC Clock Input
9	WCKI	Ip	88.2 kHz SYNC Clock Input
10	$\overline{SIMD}$	Ip	"H" = Serial Input Mode 1 "L" = Serial Input Mode 2
11	$\overline{BCSL}$	Ip	Data is read in response to the leading edge of $\overline{BCSL}$ when this terminal is set to "H" or "L".
12	BCKI	Ip	Bit Clock Input
13	DIN	Ip	Serial Data Input

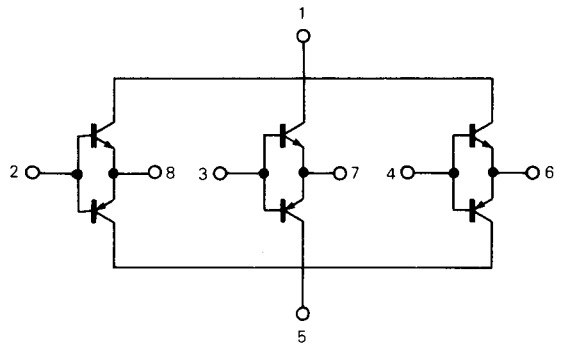
Pin	Name	I/O	Description
14	Vss	—	GND
15	DGB	O	B ch Digrich Control Output
16	DGA	O	A ch Digrich Control Output
17	Y1	O	PARALLEL DATA INVERTED OUTPUT
18	Y2	O	PARALLEL DATA INVERTED OUTPUT
19	Y3	O	PARALLEL DATA INVERTED OUTPUT
20	Y4	O	PARALLEL DATA INVERTED OUTPUT
21	Y5	O	PARALLEL DATA INVERTED OUTPUT
22	Y6	O	PARALLEL DATA INVERTED OUTPUT
23	Y7	O	PARALLEL DATA INVERTED OUTPUT
24	Y8	O	PARALLEL DATA INVERTED OUTPUT
25	Y9	O	PARALLEL DATA INVERTED OUTPUT
26	Y10	O	PARALLEL DATA INVERTED OUTPUT
27	Y11	O	PARALLEL DATA INVERTED OUTPUT
28	Y12	O	PARALLEL DATA INVERTED OUTPUT

(**Note:** Ips are input terminal with pull-up resistors.)

•μPD7564CS
(μCOM for decoding remote control signals)

I/O	Pin No.	PORT		I/O	Terminal Function	Active	
						H	L
—	1	P_0	P_{00} INTO	I	Terminal for inputting remote conrol signals	—	○
—	2	P_0	P_{01}/SCK	I	Not used	—	—
—	3	P_0	P_{02}/SO	O	Terminal for outputting parallel A/B switching/serial data	A/○	B
—	4	P_0	P_{03}/SI	O	Terminal for inputting serial/parallel switching over signal	Servi-al	Para-llel
—	5	P_8	P_{80}	O	D1: in parallel data output	○	—
O	6	P_8	P_{81}	O	D2: in parallel data output	○	—
O	7	P_8	P_{82}	O	D3: in parllel data output	○	—
CL1	8	—	—		Not used	—	—
CL2	9	—	—	—	Clock (540 kHz) is inputted from the main μCOM.	—	—
V_{DD}	10	—	—	—	+5V	—	—
RST	11	—	—	—	Reset terminal	—	—
I/O	12	P_{10}	P_{100}	O	D4: in parallel data output	○	—
I/O	13	P_{10}	P_{101}	O	D5: in parallel data oputput	○	—
I/O	14	P_{10}	P_{102}	O	D6: in parallel data oputput	○	—
I/O	15	P_{10}	P_{103}	O	D7: in parallel data oputput	○	—
I/O	16	P_{11}	P_{110}	O	D0: in parallel data output	○	—
I/O	17	P_{11}	P_{111}	O	Terminal for outputting a request signal to the main μCOM to request data transmit in response to a remote-control signal.	—	○
I/O	18	P_{11}	P_{112}	O	Not used	—	—
I/O	19	P_{11}	P_{113}	O	Not used	—	—
V_{SS}	20	—	—	—	GND	—	—

•STA341M (Transistor Array)



1:CN 2:B1
3:B2 4:B2
5:CP 6:E3
7:E2 8:E1

•μPD75108CD (μCOM for control)

Pin No.	I/O	Terminal Function	Active	
			H	L
37~44	I	Terminals for inputting 8-bit parallel signals from sub-μCOM7564CS.	○	—
49	I	Terminal for inputting a request signal of remote-control signal data from sub-μCOM.		○
48	O	Reset terminal for outputting to sub-μCOM.	—	—
12	O	Terminal for outputting a clock to sub-μCOM.	—	—
20~26	O	Terminals for outputting a key matrix. Normally at L level. When a key SW is depressed and therefore any one of input ports (pins 53 to 56) changes to "L" level, all the output ports change to "H" level. Therefore, the output port starts dynamic scanning so that "L" level signals are outputted in sequence. At this time, if a key SW is kept depressed, the input and output ports connected to this SW both change to "L" level to select the function of the depressed SW. The dynamic scanning signal is outputted for 20 (4X5) ms whenever the key SW is once depressed.	—	○
27~30	I	Terminal for inputting a key matrix	—	○
59	O	Terminal for outputting a chip enable signal. Transferable in "H" level.	○	—
58	O	Control terminal for outputting data to diaplay	—	—
60~63	O	Terminal for outputting 4-bit parallel data to display driver IC	—	○
17	O	Terminal for outputting a clock used for data transfer.	—	—
16	O	Terminal for outputting 8-bit serial data to a signal processing IC to select an operation function of the set.	—	—
15	I	Terminal for inputting 8-bit serial data from signal processing IC	—	—
53	O	Terminal for always outputting a low bias voltage so as to enable the feed operation at "H" (5V) level in play operation.	○	—
51	O	Terminals for outputting Read/Write signals in data write and transfer operation.	—	—
50	I	Terminals for inputting a write-request signal used for data writing operation.	○	—
45	I	Reset terminal.	—	—
1	I	Terminals for outputting a +5V signal when the lead-out SW is turned ON during auto-search in μCOM. In response to this signal, the feed motor returns a disk inward for 0.5 sec.	○	—
47,46	I	Terminals for inputting a clock (2.1609 MHz) for μCOM from signal processing IC (YM3805).	—	—
13	O	Terminal for outputting a "H" level signal to activate the laser output circuit when the tray is closed and the spindle motor is turned on.	○	—
2	I	Terminal for inputting an "L" level signal to stop the feed motor when the lead-in SW is on.	—	○
3	I	Terminal for inputting an "L" level signal to stop the loading motor when the tray is closed and therefore the tray SW is IN (on).	—	○
4	I	Terminal for inputting an "L" level signal to stop the loading motor when the tray is open and therefore the stray SW is OUT (off).	—	○
55	O	Terminal for outputting an "H" level signal to rotate the loading motor in the direction that the tray is closed.	○	—
54	O	Terminal for outputting an "H" level signal to rotate the loading motor in the direction that the tray is open.	○	—
18	I	Terminal for inputting an "L" level (GND) signal when timer SW is ON. If power is turned on in this condition, timer PLAY mode is set.	—	○
57	O	Terminal for outputting a muting signal to signal processing circuits. This signal is "H" in only play operation to release muting.	○	—
32		Supply voltage (+5V)	—	—

1) Clock Osillation Terminals: 79/XIN, 80/XOUT

Oscillation begins when a quartz oscillator (8.6436 MHz) is connected between these two terminals and a capacitor 20 pF is connected each between the terminal and ground.

2) EFM Signal External Circuit Terminals: 8/EMI, 7/EFMX, 6/EFMX

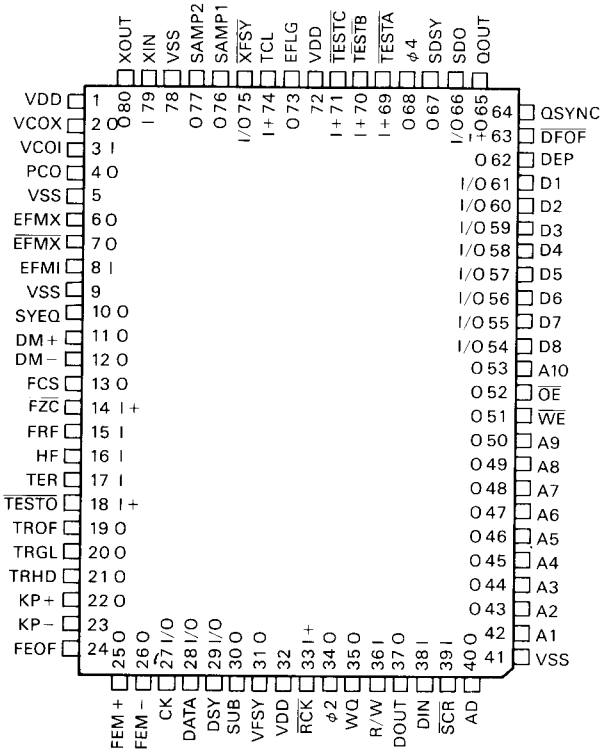
When an optical pickup signal of an appropriate level (1 to 2 Vpp) is inputted to EFMI terminal, two 180 out-of-phase signals with a limited amplitude are generated from EFMX and EFMXA terminals. These two signals are used for slice level control.

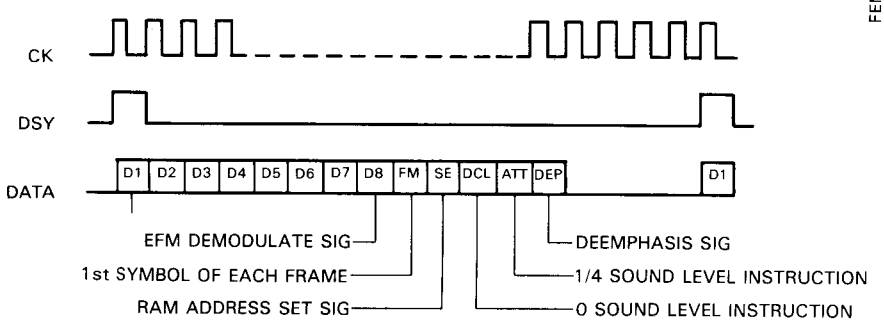
3) Clock Reproduce Circuit Terminals: 4/PCO, 3/VCOI, 2/VCOX

When an LC resonance circuit is connected between VCOI and VCOX terminals, clock oscillation (mean freq: 8.6436 MHz) begins. PCO terminal output is a phase difference signal between CLOCK and EFM pattern at when the polarities of both change. The polarity of a variable capacitance diode is determined so that the frequency increases at positive polarity (+) for clock reproduction.

4) EFM Demodulating Signal Check Output Terminals: 27/CK, 28/DATA, 29/DSY

CK is a clock of 4.3218 MHz (on an average) obtained by dividing VCD. DATA is a serial signal of bit rate determined by this clock. An 8-bit EFM demodulating signal and a 5-bit data control signal are included in the 17-bit length. DSY is a synchronizing signal which changes to "H" at the timing when the head signal of CK rises. These three terminals are used for device check.





5) Q Code Output Terminals: 35/WQ, 36/R/W, 37/DOUT, 39/SCKS

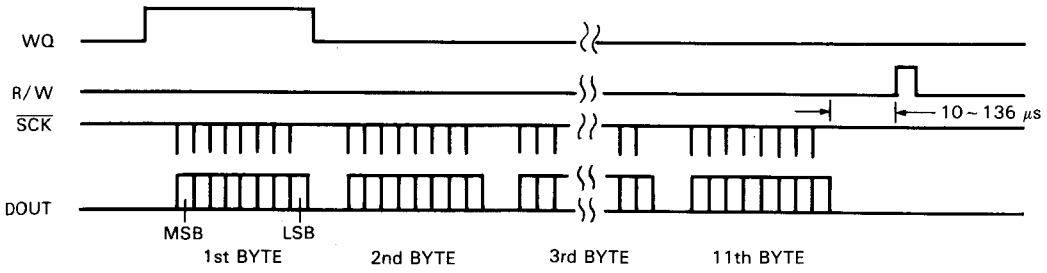
When μCOM detects an "H" of WQ and SCK is outputted, the DATA can be outputted from DOUT terminal as a series of bits. After SCK clock has been outputted, R/W rises once to "H" for a short time period to finish the operation.

DOUT CONTENTS

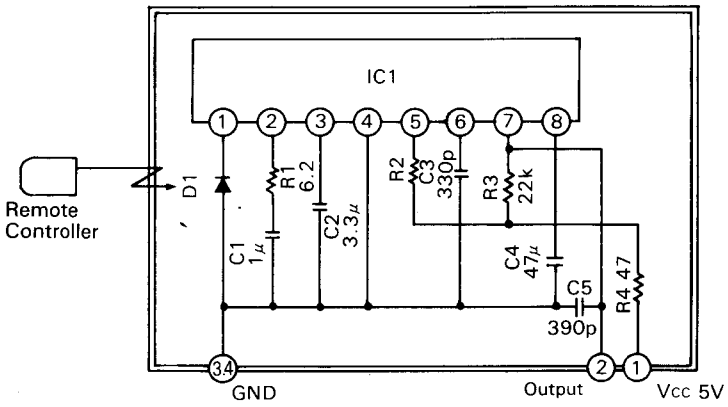
SIGN: SEARCH POLARITY	MZ: DISK MOTOR STOP
S2, S1: SEARCH MODE	FCO: FOCUS OUT
8F, 4F: FRAME ERROR	NQ: NEW Q CODE

MSB LSB

SIGN	S2	S1	8F	4F	MZ	FCO	NQ



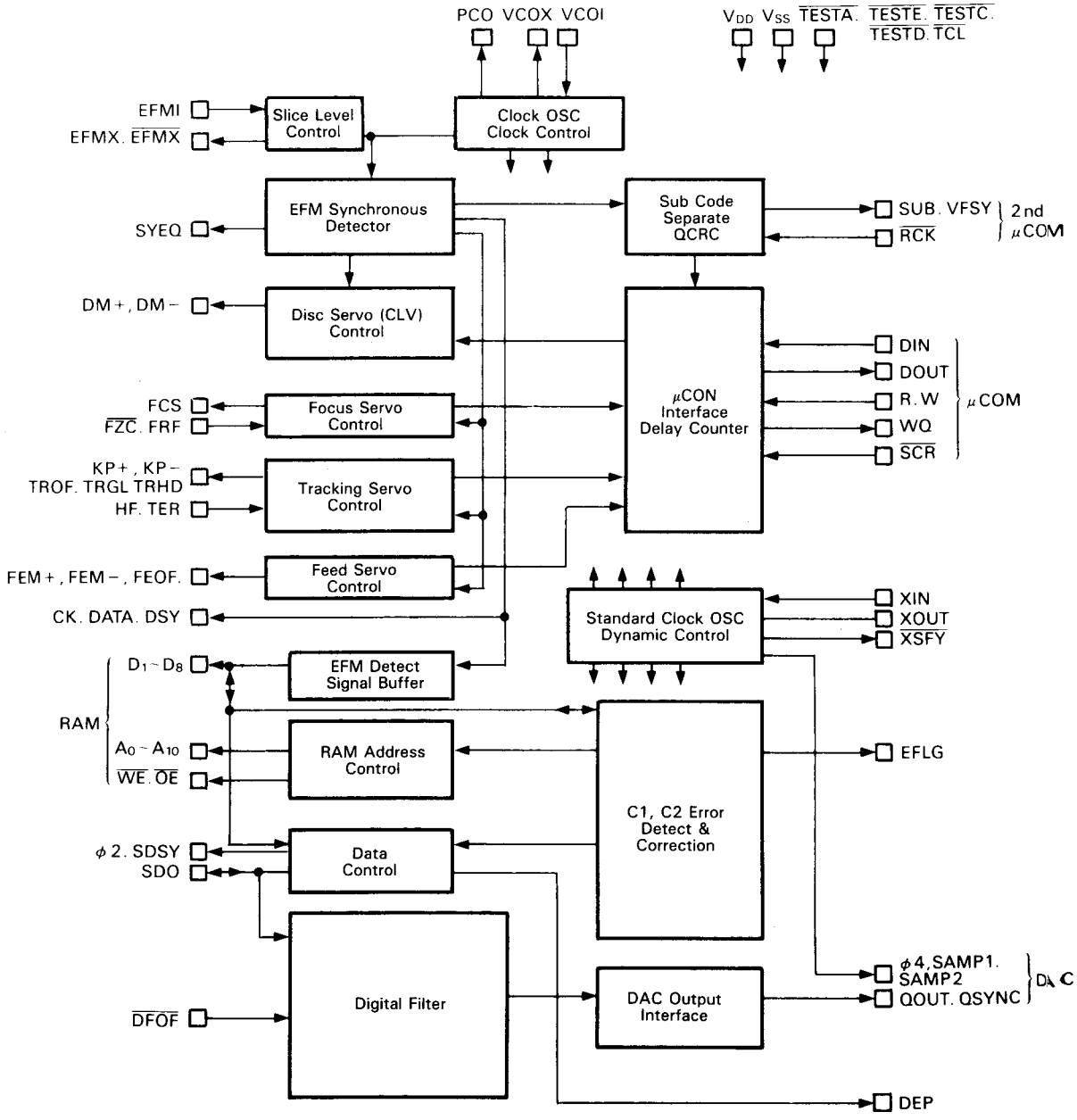
•BX-1407 (Remote Controller Receiver)



IC1: CX20106A Chip
D1: PIN Photo Diode
C1,C2,C4: E.C. 5%
C3,C3:
R2: ±1% (for Adjust)

1. Vcc
2. Output
3. GND
4. GND

•YM3805 (Signal Managemente and Servo Control)

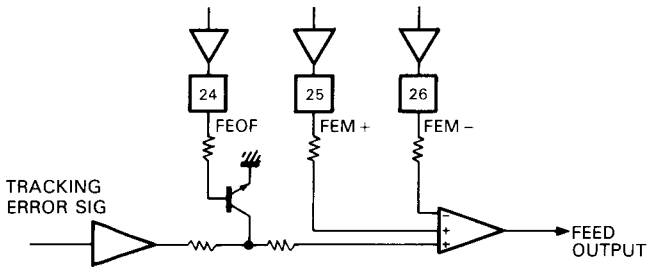


9) Disk Servo Terminals: 11/DM+, 12/DM−

DM+ and DM− are PWM outputs with one frame as period. These signals are not set to "H" simultaneously. The resolving power is 925ns (1/147 of one frame) under stable PLAY conditions.

10) Feed Servo Terminals: 24/FEOF, 25/FEM+, 26/FEM−

FEM+ or FME− signal is outputted as a high speed feed signal. During this period, since feed servo is cut off, FEOF signal is outputted.



11) RAM Connecting Terminals: 40/A0 to 53/A10, 51/WE, 53/$\overline{OE}$, 54/D8 to 61/D1

These terminals are connected to a RAM to apply address signals, input/output control signals, and data signals. SPC is in output status if WE is at "L" and in input status if WE is at "H".

12) Quartz Clock Synchro Signal Terminal: 75/$\overline{XFSY}$

Frame synchronizing signal of 7.35 kHz.

13) Data Control Circuit and Serial Signal Output Terminals: 34/ϕ2, 66/SDO, 67/SDSY, 69/$\overline{TESTA}$, 71/$\overline{TESTC}$

ϕ2 is a clock of 2.1609 MHz. SDO are ϕ2 bit-rate serial output signals for DAC. LCH is 24 bits; RCH is 25 bits; LSB is fast. SDO is an output status because $\overline{TESTA}$ = $\overline{TESTC}$ are usually both at "H". However, when TESTA = TESTC are both set to "L", these signals can be inputted to a digital filter in the same format. SDSY is a synchronizing signal which is set to "H" if SDO is LCH but "L" if SDO is RCH.

14) DAC Interface Terminals: 65/QOUT, 68/ϕ4

Serial output signal QOUT for DAC is a 16-bits serial data which synchronizes with the leading edge of 4.3218 MHz (ϕ4). This signal is outputted in 2's complementary format.

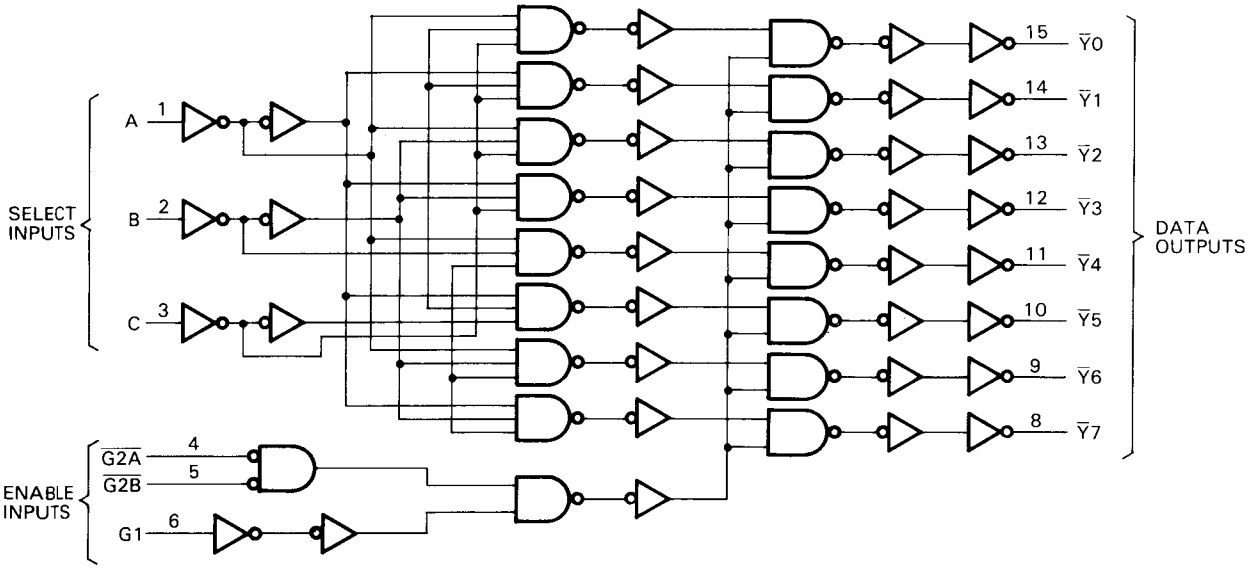
15) Deemphasis Signal Terminal: 62/DEP

Deemphasis is necessary when the frequency characteristic control signal is at "H".

16) Test Terminals: 69/$\overline{TESTA}$, 70/$\overline{TESTB}$, 71/$\overline{TESTC}$, 18/$\overline{TESTD}$, 74/TCL

These test terminals are usually at "H" through internal PULL-UP resistors. Connection is unnecessary.

•TC74HC138P (Line Decoder)



INPUTS						OUTPUTS								SELECT OUTPUT
ENABLE			SELECT											
G1	G2A	G2B	C	B	A	Y_0	Y_1	Y_2	Y_3	Y_4	Y_5	Y_6	Y_7	
L	X	X	X	X	X	H	H	H	H	H	H	H	H	NONE
X	H	X	X	X	X	H	H	H	H	H	H	H	H	NONE
X	X	H	X	X	X	H	H	H	H	H	H	H	H	NONE
H	L	L	L	L	L	L	H	H	H	H	H	H	H	Y_0
H	L	L	L	L	H	H	L	H	H	H	H	H	H	Y_1
H	L	L	L	H	L	H	H	L	H	H	H	H	H	Y_2
H	L	L	L	H	H	H	H	H	L	H	H	H	H	Y_3
H	L	L	H	L	L	H	H	H	H	L	H	H	H	Y_4
H	L	L	H	L	H	H	H	H	H	H	L	H	H	Y_5
H	L	L	H	H	L	H	H	H	H	H	H	L	H	Y_6
H	L	L	H	H	H	H	H	H	H	H	H	H	L	Y_7

X: Don't Care

6) μCOM Commande Terminals: 36/R/W, 38/DIN, 39/SCK

The DATA can be inputted when μCOM sets R/W to "H" and then SCK CLOCK is outputted in synchronism with DIN. If an instruction is 7, 4 bytes are inputted. If not 7, only 1 byte is inputted. Immediately after power is turned on, commands (T4: "H", others: "L") should be sent for SPC initialization.

DIN CONTENS

1	COMMAND
2	μMIN
3	μSEC
4	μFRAME

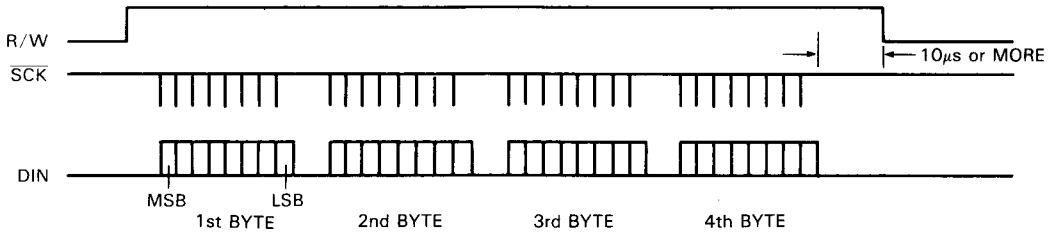
MSB

M4	M3	M2	M1	T4	T3	T2	T1

INSTRUCTION — TEST

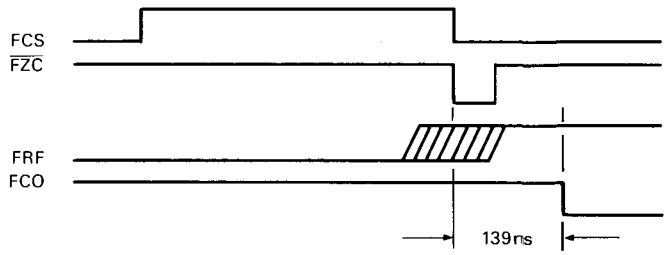
TARGET TIME

0 0 0	X	0	STOP
0 0 1	0	1	FEED FORWARD
0 0 1	1	1½	FEED RETURN
0 1 0	X	2	FOCUS START
0 1 1	0	3	DISC START
0 1 1	1	3½	DISC BRAKE
1 0 0	0	4	PLAY
1 0 0	1	4½	PLAY MUTE
1 0 1	0	5	FF
1 0 1	1	5½	FB
1 1 0	0	6	FFF
1 1 0	1	6½	FFB
1 1 1	X	7	SEARCH (PAUSE)



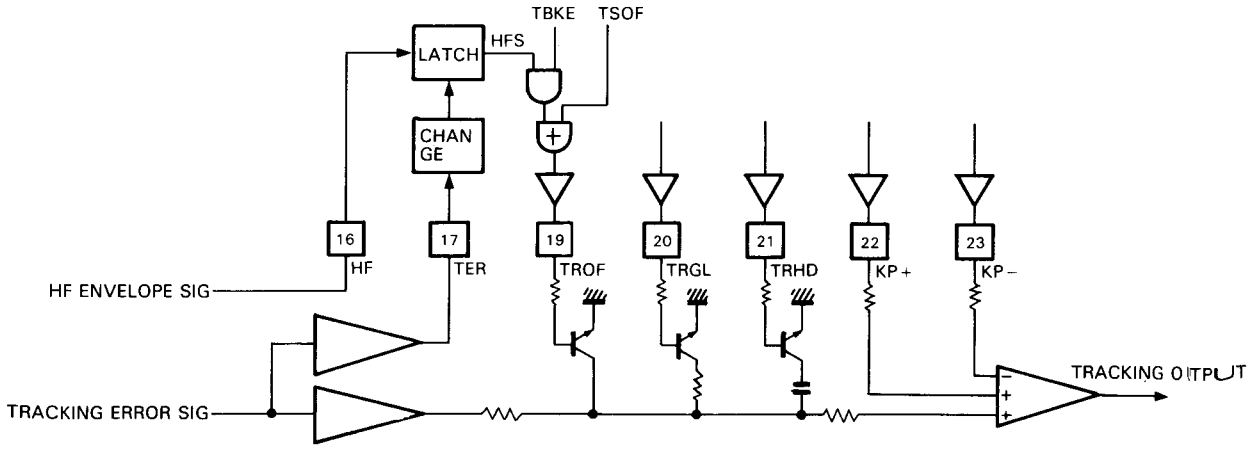
7) Focus Servo Terminals: Input-14/FZC, 15/FRF, Output-13/FCS

These terminals are used for focus servo control in response to FCS signal. If FZC signal is generated when FCS signal reaches the focus point, the servo-operation stops, and FCO flag is took down internally in response to FRF signal which detects a reflected light.



8) Tracking Servo Terminals: Input-16/HF, 17/TER Output: 19/TROF, 20/TRGL, 21/TRHD, 22/KP+, 23/KP−

TROF signal is outputted by sampling a change in amplitude of HF signal generated during search across tracks at a zero-cross point of tracking error signal TER. The servo is controlled ON or OFF on the basis of the change in level of this signal to facilitate the tracking operation. For tracking operation, a signal KP+ or KP− is outputted while outputting TRHD to hold the tracking error signal. TRGL signal serves to increase the tracking gain after a kick operation ends.



3. HOW TO REPLACE MAIN PARTS

(Refer to Set Exploded View on Page 15 and Mechanism Exploded View on Page 16)

A. Bonnet ⑰

1) Remove four upper surface screws ㉜ and two rear surface screws ㊶.

B. Front Panel Assembly ②

1) Remove three upper surface screws ㊶.
2) Remove special screws ㊺ to remove right and left side panels.
3) Remove nine bottom panel fixing screws.

C. Disk Tray ⑧

1) Pull clamp cam ⑤ toward you and push disc tray until it is brought into contact with the stopper.
2) Push downward the place (denoted by *) of tray stopper ㉑ mounted on mechanism chassis and pull the disk tray toward you. (See Fig. 3-1)

D. Mechanism Chassis ㉒

1) Remove disk tray ⑧.
2) Remove four mechanism chassis fixing screws ㊶. In this status, the chassis can be turned upside down.

E. Loading Belt ⑯, Pulley ⑰, Gear ⑱

1) Remove belt cover ⑮.
2) Remove loading belt.
3) Remove CS ring ㉞ and then pulley ⑰.
4) Remove gear ⑱.

F. Loading Motor ㉖

1) Remove belt cover ⑮.
2) Remove belt ⑯.
3) Remove 5φ pulley ㉞.
4) Remove two motor mounting screw ㊱ to remove motor ㉖.

G. Clamp Arm Assembly ④

1) Spread out the stopper portion (the leftside of the stay) of clamp stay ㉓ to remove clamp arm assembly ④. (See Fig. 3-2)
2) Remove clamp spring ㉔ from the clamp arm.

H. Spindle Motor ㊵

1) Remove disc tray ⑧.
2) Remove four mechanism chassis fixing screws.
3) Remove turn table fixing screw ㊴ to remove turn table.
4) Remove two motor mounting screws ㊴ to remove motor.

Note: In mounting the motor, a distance between the sub-chassis and the turn table should be 20.4 ± 1 mm. In further detail, refer to Adjusting Method on page 17. (See Fig. 3-3)

I. Feed Motor Assembly ㊶

1) Remove disc tray ⑧.
2) Remove four mechanism chassis fixing screws ㉒ and turn the chassis upside down.
3) Remove two motor mounting screws ㊱.
4) Remove leads from feed motor board F-5570.

J. Pickup Head Assembly ㊳

1) Remove disc tray ⑧.
2) Remove clamp arm assembly ④.
3) Remove four support fixing screws ㊸ to remove two support rails ㉚.
4) Remove two lead connector plugs from head assembly.

K. How to Mount Disc Tray

1) Fit disc tray to two tray guides ⑨.
2) When the disc tray is pushed a little inward, the rightside top end is brought into contact with leaf spring ㊺. By pushing the leaf spring outward, further push the disc tray to guides located at the middle of the mechanism chassis. (See Fig. 3-1)
3) The leftside top end of the tray comes over the tray stopper ㉑ before the guides. Here, fit the disc tray to two guides by pushing the tray end from above.
4) Push the disc tray to the end.

Fig. 3-1

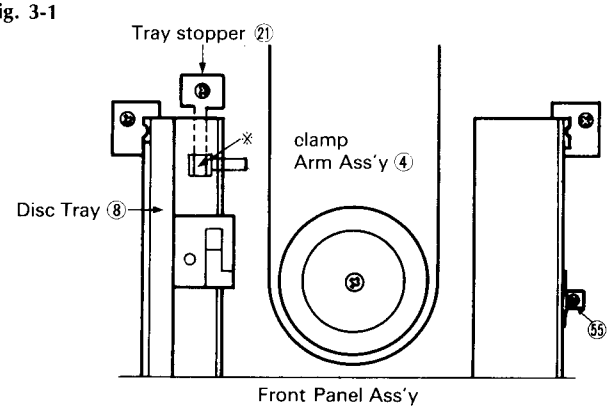


Fig. 3-2

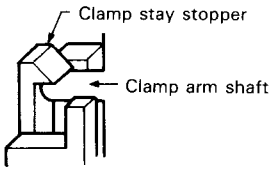
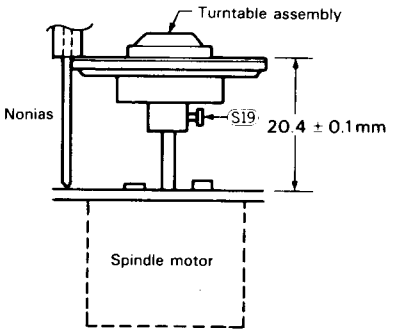
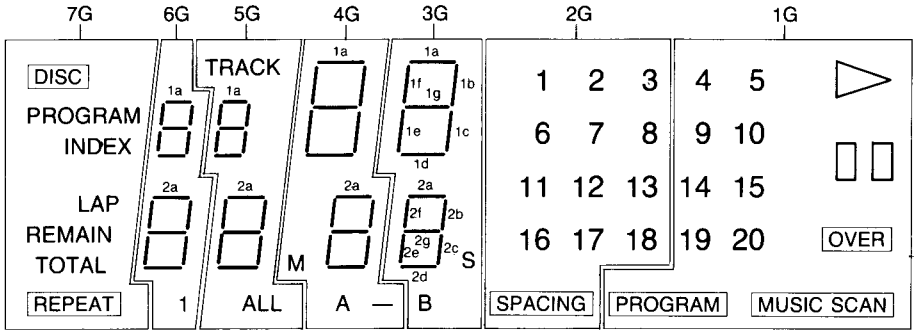


Fig. 3-3



•Fluorescent Display Tube (FV170G)

Grid Assignment



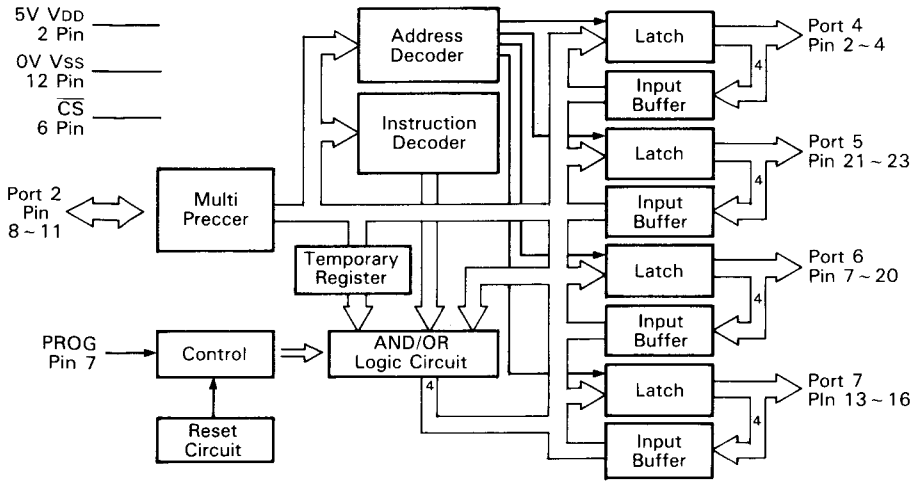
Anode Connection

	7G	6G	5G	4G	3G	2G	1G
a	DISC	1a	1a	1a	1a	1	4
b	PROGRAM	1b	1b	1b	1b	2	5
c	—	1c	1c	1c	1c	6	9
d	—	1d	1d	1d	1d	8	□□
e	—	1e	1e	1e	1e	7	10
f	INDEX	1f	1f	1f	1f	3	▷
g	—	1g	1g	1g	1g	—	—
h	—	—	TRACK	M	S	—	—
i	LAP	2a	2a	2a	2a	11	14
j	RAMAIN	2b	2b	2b	2b	12	15
k	—	2c	2c	2c	2c	16	19
l	—	2d	2d	2d	2d	18	MUSIC SACN
m	—	2e	2e	2e	2e	17	20
n	TOTAL	2f	2f	2f	2f	13	OVER
o	REPEAT	2g	2g	2g	2g	—	—
p	—	1	ALL	A—	B	SPACING	PROGRAM

Pin Connection

PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
CONNECTION	F	F	NP	p	l	m	k	NP	o	n	j	i	NP	h	d	e	c	NP	g	f	b	a	NP	NP	NP	NP	NP	NP	NP	NP	NP	7G	6G	5G	NP	4G	3G	2G	1G	NP	F	F

•TMP82C43P (Extend I/O Port)



Pin No.	Description
1~5, 13~23	FL Tube Drive Output Active H
6	Chip Select Input Active H
7	DATA Control P20~23: DATA Output ON P20~23: DATA ENABLE
8~11	FL Tube 4 bit Parallel DATA Input Active H
12	Vss 0V
24	VDD 4V

Parts List <F-5583>

Parts No.	Stock No.	Description
fC26	46284100	0.1μF 50V F.C.
fC27	48748400	0.1μF 50V C.C.
fC29	46284100	0.1μF 50V F.C.
fC30	46284100	0.1μF 50V F.C.
fC48	48103500	2.2μF 50V E.B.
fC49	46281800	1000pF 50V F.C.
fC50	48748400	0.1μF 50V C.C.
fC51	46531300	5600pF 50V F.C.
fC52	48103400	1μF 50V E.B.
fC53	48748400	0.1μF 50V C.C.
fC54	48748400	0.1μF 50V C.C.
fC57	48748400	0.1μF 50V C.C.
fC58	48748400	0.1μF 50V C.C.
fC66	46283000	0.012μF 50V F.C.
fC69	48748400	0.1μF 50V C.C.
fC80	48103200	0.47μF 50V E.B.
fC82	46282900	0.01μF 50V F.C.
fVR1	46634900	100kΩ S.V.R., FOCUS OFFSET
fVR2	46634100	4.7kΩ S.V.R., FOCUS GAIN
fVR3	46634900	100kΩ S.V.R., TRACKING OFFSET
fVR4	46634100	4.7kΩ S.V.R., TRACKING GAIN
fVR5	46634700	47kΩ S.V.R., KICK 2
fVR6	46634700	47kΩ S.V.R., KICK 1
•Transistor		
mQ5	46359701	2SA952
	or 46614001	2SA1283
mQ6	46367001	2SA1115
	or 48058601	2SA933S
mQ9	46367101	2SC2603
	or 48058801	2SC1740S
mQ10	46367001	2SA1115
	or 48058601	2SA933S
•IC		
⚠mIC1	48470500	μPC7812H
⚠mIC2	48471000	μPC7912H
⚠mIC3	46720300	μPC7805H
•Diode		
mD2	03117600	1S2473T77
	or 46086000	1S1588TP-3
⚠mD3	07193300	UB-152LFF
•Zener Diode		
mDZ2	46113000	05Z9.1-Y
	or 46113100	05Z9.1-Z
mDZ6	46113500	05Z11-X
	or 46113600	05Z11-Y
mC16	48748400	0.1μF 50V C.C.
mC17	48748400	0.1μF 50V C.C.
mC18	48832200	2200μF 25V E.C.
mC19	48832200	2200μF 25V E.C.
mC20	48748400	0.1μF 50V C.C.
mC21	48748400	0.1μF 50V C.C.
mC22	48748400	0.1μF 50V C.C.
mC23	48748400	0.1μF 50V C.C.
mC24	48831900	220μF 16V E.C.
mC25	48831900	220μF 16V E.C.
mC26	48748400	0.1μF 50V C.C.
mC27	48831900	220μF 16V E.C.
•IC		
vIC5	48780900	SM5806P

4-4. F-5666 Phone Jack Board

Parts No.	Stock No.	Description
kVR1	48728000	20KAX2 V.R., PHONE
oJ3	46579600	Jack, PHONE

4-5. F-5584 D/A Converter & Audio Amp. Board

(Stock No. 01015201)

Parts No.	Stock No.	Description
aZ65	07663700	Screw CTB3008-FV20
•IC		
kIC1	48577000	M5216L
kC1	48102000	10μF 16V E.B.
kC2	48832100	100μF 25V E.C.
kC3	48832100	100μF 25V E.C.
•Transistor		
mQ1	48150101	2SD1406
	or 48508801	2SC3851
mQ2	46367101	2SC2603
	or 48058801	2SC1740S
mQ3	46367001	2SA1115
	or 48058601	2SA933S
mQ4	48150801	2SB1015
	or 48509101	2SA1488
mQ7	46367101	2SC2603
	or 48058801	2SC1740S
mQ8	46367001	2SA1115
	or 48058601	2SA933S
•FET		
mFT1	46643502	2SK163-L1
	or 46643503	2SK163-L2
	or 46643602	2SK117-GR
	or 46643603	2SK117-BL
mFT2	46643502	2SK163-L1
	or 46643503	2SK163-L2
	or 46643602	2SK117-GR
	or 46643603	2SK117-BL
•Diode		
mD1	07193300	UB-152LFF
•Zener Diode		
mDZ1	46111700	05Z6.2-X
	or 46111800	05Z6.2-Y
mDZ3	46114800	05Z16-Y
	or 46114900	05Z16-Z
mDZ4	46114800	05Z16-Y
	or 46114900	05Z16-Z
mDZ5	46111700	05Z6.2-X
	or 46111800	05Z6.2-Y
mC1	48831700	4700μF 35V E.C.
mC2	48831700	4700μF 35V E.C.
mC3	46284100	0.1μF 50V F.C.
mC4	46284100	0.1μF 50V F.C.
mC10	48683500	100μF 25V E.C.
mC11	48683500	100μF 25V E.C.
mC14	48748400	0.1μF 50V C.C.
mC15	48748400	0.1μF 50V C.C.
•Transistor		
vQ1	48171600	DTC114YS
vQ2	46604301	2SC3327
vQ3	46367101	2SC2603
	or 48058801	2SC1740S
vQ4	46367001	2SA1115
	or 48058601	2SA933S
vQ5	46367101	2SC2603
	or 48058801	2SC1740S

4. PARTS LIST OF CIRCUIT BOARD

4-1. F-5564 Control Switch Board (Stock No. 01018901)

Parts No.	Stock No.	Description
oS1	48592000	Push SW., □
oS2	48592000	Push SW., ▯▯
oS3	48592000	Push SW., ◁◁
oS4	48592000	Push SW., ▷
oS5	48592000	Push SW., M-SCAN
oS6	48592000	Push SW., ▷▷
oS7	48592000	Push SW., CLR
oS8	48592000	Push SW., ◁◁
oS9	48592000	Push SW., SET
oS10	48592000	Push SW., 9
oS11	48592000	Push SW., ▷▷
oS12	48592000	Push SW., 0
oS13	48592000	Push SW., 6
oS14	48592000	Push SW., ←
oS15	48592000	Push SW., →
oS16	48592000	Push SW., 3
oS17	48592000	Push SW., 5
oS18	48592000	Push SW., 8
oS19	48592000	Push SW., SPACE
oS20	48592000	Push SW., 2
oS21	48592000	Push SW., 4
oS22	48592000	Push SW., 7
oS23	48592000	Push SW., CHK
oS24	48592000	Push SW., 1
oS25	48592000	Push SW., 1/ALL
oS26	48592000	Push SW., DISP
oS27	48592000	Push SW., OP/CL
oS28	48592000	Push SW., A-B

4-2. F-5568 Power Supply Fuse Board

Parts No.	Stock No.	Description
⚠pC1	46426300	1000pF 400V C.C.
⚠pC2	46426300	1000pF 400V C.C.
⚠pC3	46943200	0.01μF 400V C.C.
⚠pC4	46943200	0.01μF 400V C.C.
⚠pF1	48721000	Fuse 0.8A
⚠pL1	48727800	LINE Filter LF-2C
⚠pS1	46413900	Push SW., POWER

4-3. F-5583 Servo Control Board (Stock No. 01019201)

Parts No.	Stock No.	Description
aZ62	48828400	Screw
aZ64	07663700	Screw CTB3008-FV20
•Transistor		
fQ1	46367101	2SC2603
	or 48058801	2SC1740S
fQ2	46367101	2SC2603
	or 48058801	2SC1740S
fQ3	46367101	2SC2603
	or 48058801	2SC1740S
fQ4	46367101	2SC2603
	or 48058801	2SC1740S
fQ5	46367001	2SA1115
	or 48058601	2SA933S
fQ6	46367101	2SC2603
	or 48058801	2SC1740S
fQ7	46367101	2SC2603
	or 48058801	2SC1740S

Parts List <F-5583>

Parts No.	Stock No.	Description
fQ8	46367101	2SC2603
	or 48058801	2SC1740S
fQ9	46367101	2SC2603
	or 48058801	2SC1740S
fQ10	46367101	2SC2603
	or 48058801	2SC1740S
fQ11	46367101	2SC2603
	or 48058801	2SC1740S
fQ12	46367101	2SC2603
	or 48058801	2SC1740S
fQ13	46367101	2SC2603
	or 48058801	2SC1740S
fQ14	46367101	2SC2603
	or 48058801	2SC1740S
fQ17	46359801	2SC2001
fQ18	46359701	2SA952
fQ19	46367101	2SC2603
	or 48058801	2SC1740S
fQ20	46719900	DTC124ES
fQ21	46719800	DTA124ES
fQ22	46367101	2SC2603
	or 48058801	2SC1740S
fQ23	46719900	DTC124ES
fQ26	46367101	2SC2603
	or 48058801	2SC1740S
fQ27	46719800	DTA124ES
fQ29	46719900	DTC124ES
•FET		
fFT1	46643800	2SJ103-Y
	or 46643801	2SJ103-GR
•IC		
fIC1	46078900	M5218L
fIC2	46078900	M5218L
fIC4	46078900	M5218L
fIC5	46078900	M5218L
fIC6	46078900	M5218L
fIC7	48667300	STA341M
fIC11	07233100	BA6109
•Diode		
fD2	46464000	MC921
fD3	03117600	1S2473T77
	or 46086000	1S1588TP-3
fD4	03117600	1S2473T77
	or 46086000	1S1588TP-3
fD5	03117600	1S2473T77
	or 46086000	1S1588TP-3
fD6	03117600	1S2473T77
	or 46086000	1S1588TP-3
fD7	03117600	1S2473T77
	or 46086000	1S1588TP-3
fD8	03117600	1S2473T77
	or 46086000	1S1588TP-3
•Zener Diode		
fDZ1	46112700	05Z8.2-Y
fC3	48748400	0.1μF 50V C.C.
fC4	48748400	0.1μF 50V C.C.
fC6	46284100	0.1μF 50V F.C.
fC7	48748400	0.1μF 50V C.C.
fC8	48748400	0.1μF 50V C.C.
fC11	46283700	0.047μF 50V F.C.
fC15	46283700	0.047μF 50V F.C.
fC17	46282800	8200pF 50V F.C.
fC19	46284100	0.1μF 50V F.C.
fC24	48748400	0.1μF 50V C.C.
fC25	48748400	0.1μF 50V C.C.

to be continued ►

Parts List <F-5584>

Parts No.	Stock No.	Description
vQ6	46367001	2SA1115
	or 48058601	2SA933S
•FET		
vFT1	46724700	2SK241-Y
	or 46724701	2SK241-GR
vFT2	46724700	2SK241-Y
	or 46724701	2SK241-GR
vFT3	03703002	2SK117-GR
	or 03703003	2SK117-BL
•IC		
vIC1	48666701	PCM54JP 16BIT DAC
vIC3	48730300	M5238P JFET
vIC4	48730300	M5238P JFET
vIC6	46078900	M5218L
•Diode		
vD1	03117600	1S2473T77
vD2	03111600	1S2473
	or 03111800	1S1588
vD3	03111600	1S2473
	or 03111800	1S1588
vPH1	48586801	Photo Transistor PC-817
	or 48586802	Photo Transistor PC-817
	or 48586803	Photo Transistor PC-817
vR1	48762200	470kΩ 1/4W M.R.
vR2	48761400	220kΩ 1/4W M.R.
vR3	48763000	1MΩ 1/4W M.R.
vR9	48030300	12kΩ 1/4W C.R.
vR10	48028900	3.3kΩ 1/4W C.R.
vR31	48893200	47Ω 1/4W C.R.
vR38	48893200	47Ω 1/4W C.R.
vR42	48892400	22Ω 1/4W C.R.
vR43	48892400	22Ω 1/4W C.R.
vR44	48894800	220Ω 1/4W C.R.
vC1	46282900	0.01μF 50V F.C.
vC2	48748400	0.1μF 50V C.C.
vC3	48748400	0.1μF 50V C.C.
vC10	48748400	0.1μF 50V C.C.
vC11	48748400	0.1μF 50V C.C.
vC12	46696400	0.033μF 50V F.C
vC15	48748400	0.1μF 50V C.C.
vC16	48748400	0.1μF 50V C.C.
vC27	48748400	0.1μF 50V C.C.
vC28	48748400	0.1μF 50V C.C.
vC30	48103600	3.3μF 50V E.B.
vC32	48103600	3.3μF 50V E.B.
vFL1	48729800	Low Pass Filter
	or 48730810	Low Pass Filter
vVR1	48119300	100kΩ S.V.R., Distortion
vRL1	46630700	Relay, 12V

4-6. F-5667 Output Terminal Board

Parts No.	Stock No.	Description
oJ1	22005700	2P Terminal, OUTPUT

4-7. F-5704 Digrich Board

Parts No.	Stock No.	Description
•Transistor		
vQ51	46367001	2SA1115
	or 48058601	2SA933S
vQ52	46367001	2SA1115
	or 48058601	2SA933S
•Zener Diode		
vDZ51	46113000	05Z9.1-Y
	or 46113100	05Z9.1-Z
vDZ52	46109200	05Z2.7-Z
	or 46109300	05Z3.0-X

4-8. F-5686 Signal Management Board

(Stock No. 01033101)

Parts No.	Stock No.	Description
•Transistor		
fQ15	46367001	2SA1115
	or 48058601	2SA933S
fQ16	46719900	DTC124ES
•IC		
fIC3	48509700	M5219P
fIC9	48780100	YM3805
fIC10	48667200	HM6116P-4
	or 48718000	TC5517AP-2
	or 48718100	μPD446C-2
	or 48718200	MB8416-20
	or 48718300	MSM5128-15RS
	or 48839700	CXK5816PN-12L
fXO1	48592600	Quartz Element HC-49/U
fD1	48592300	V.V. CAPA. Diode SVC211SP
fR72	48440400	22kΩ 1/5W M.R.
fR73	48440400	22kΩ 1/5W M.R.
fR74	48440400	22kΩ 1/5W M.R.
fR75	48440400	22kΩ 1/5W M.R.
fC34	46661100	560pF 100V F.C.
fC35	48748400	0.1μF 50V C.C.
fC36	48745200	
fC37	46280000	3300pF 50V F.C.
fC38	46280500	0.01μF 50V F.C.
fC39	46281300	0.047μF 50V F.C.
fC41	48748400	0.1μF 50V C.C.
fC43	46281700	0.1μF 50V F.C.
fC44	46281700	0.1μF 50V F.C.
fC59	48745200	
fFL1	48592400	VCO Coil

4-9. F-5795 Display Board (Stock No. 01070601)

Parts No.	Stock No.	Description
•Transistor		
nQ1	48915500	DTA114YF
nQ2	48915500	DTA114YF
nQ3	48915500	DTA114YF
nQ4	48915500	DTA114YF
nQ5	48915500	DTA114YF
nQ6	48915500	DTA114YF
nQ7	48915500	DTA114YF
nQ8	48915500	DTA114YF
nQ9	48915500	DTA114YF
nQ10	48915500	DTA114YF
nQ11	48915500	DTA114YF
nQ12	48915500	DTA114YF
nQ13	48915500	DTA114YF
nQ14	48915500	DTA114YF
nQ15	48915500	DTA114YF
nQ16	48915500	DTA114YF
nQ17	48915500	DTA114YF
nQ18	48915500	DTA114YF
nQ19	48915500	DTA114YF
nQ20	48915500	DTA114YF
nQ21	48915500	DTA114YF
nQ22	48915500	DTA114YF
nQ23	48915500	DTA114YF
•IC		
nIC1	48424100	TC74HC138P
	or 48724300	μPD74HC138C
nIC2	48904400	μPD82C43C
	or 48904500	TMP82C43P
nFL1	48903700	FL. Display Tube VF170G
nR1	46350500	100kΩX8 1/8W A.R.
nR2	46350500	100kΩX8 1/8W A.R.
nR3	46350500	100kΩX8 1/8W A.R.
nR4	48900400	47kΩ 1/4W C.R.
nR5	48900400	47kΩ 1/4W C.R.
nR6	48898000	4.7kΩ 1/4W C.R.
nR7	48898000	4.7kΩ 1/4W C.R.
nR8	48898000	4.7kΩ 1/4W C.R.
nR9	48898000	4.7kΩ 1/4W C.R.
nC1	48748400	0.1μF 50V C.C.
nC2	48748400	0.1μF 50V C.C.
nC3	48748400	0.1μF 50V C.C.
nC4	48748400	0.1μF 50V C.C.
nC5	48674200	100μF 25V E.C.
nC6	48671600	100μF 10V E.C.

4-10. F-5796 Timer Switch Board

Parts No.	Stock No.	Description
oS29	48781400	Slide SW., TIMER

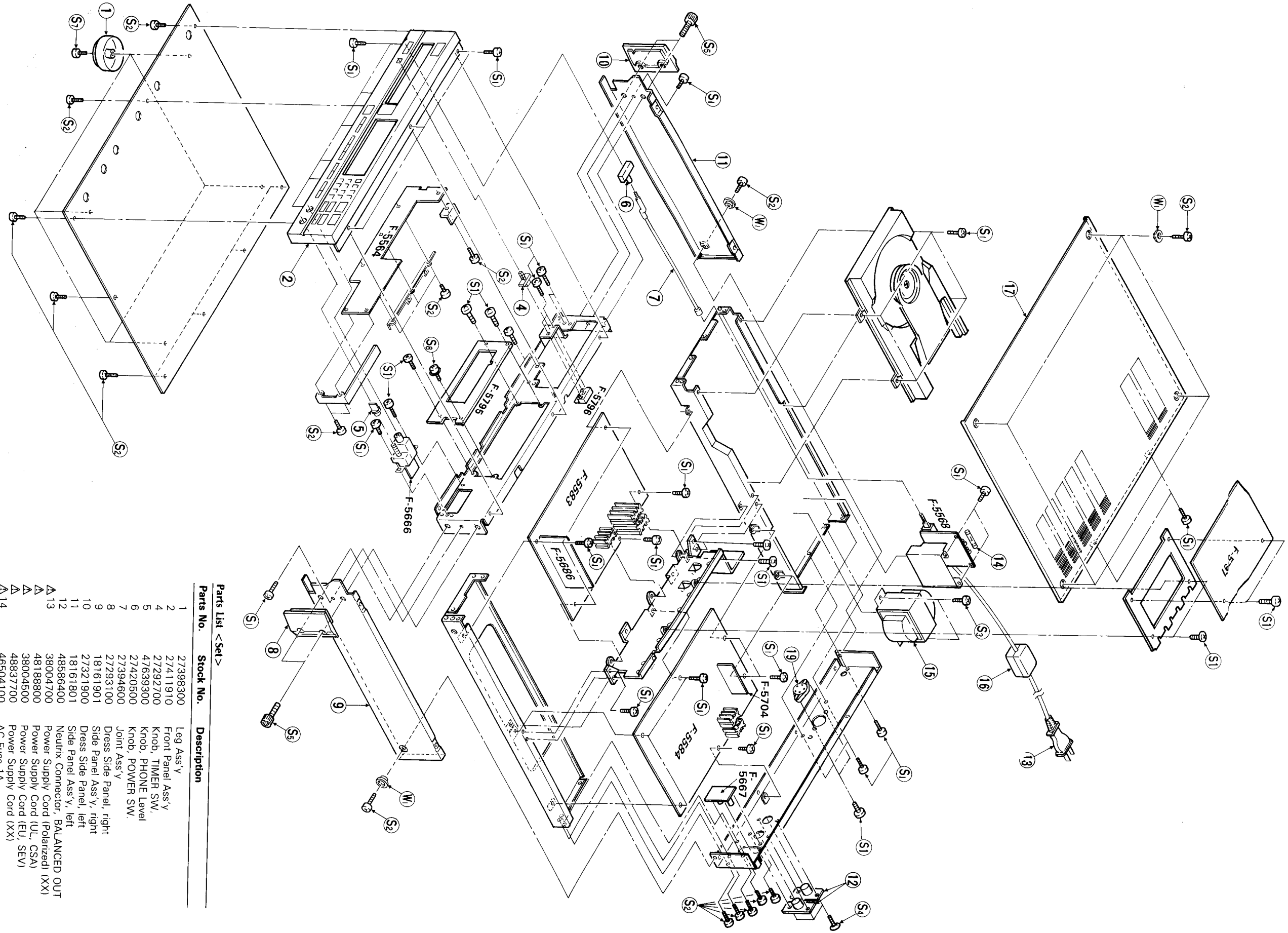
4-11. F-5797 Micro Computer Board

(Stock No. 01070901)

Parts No.	Stock No.	Description
•Transistor		
mQ100	48509101	2SA1488
mQ101	46367001	2SA1115
	or 48058601	2SA933S
•Diode		
mD100	07193300	UB-152LFF
•Zener Diode		
mDZ100	03168300	RD4.7F-B
mDZ101	46116100	05Z24-Z
mC100	48748400	0.1μF 50V C.C.
mC101	48695600	470μF 50V E.C.
mC102	48684000	47μF 35V E.C.
mC103	48683500	100μF 25V E.C.
mC104	48748400	0.1μF 50V C.C.
mC105	48748400	0.1μF 50V C.C.
mC106	48748400	0.1μF 50V C.C.
mC107	48748400	0.1μF 50V C.C.
•IC		
wIC1	48904100	μPD75P108CW-
wIC2	48667100	μPD7564CS-055
wIC3	46671300	LC4969
wR1	48765800	4.7kΩX4 A.R.
wR2	48774800	100kΩX8 A.R.
wR3	48898800	10kΩ 1/4W C.R.
wR4	48898000	4.7kΩ 1/4W C.R.
wR5	46341500	4.7kΩX4 1/8W A.R.
wR6	48898000	4.7kΩ 1/4W C.R.
wC1	48748400	0.1μF 50V C.C.
wC2	48682900	100μF 16V E.C.
wC3	48748400	0.1μF 50V C.C.
wC4	48748400	0.1μF 50V C.C.

5. EXPLODED VIEW & PARTS LIST

5-1. Exploded View of Set



Parts List <Set>

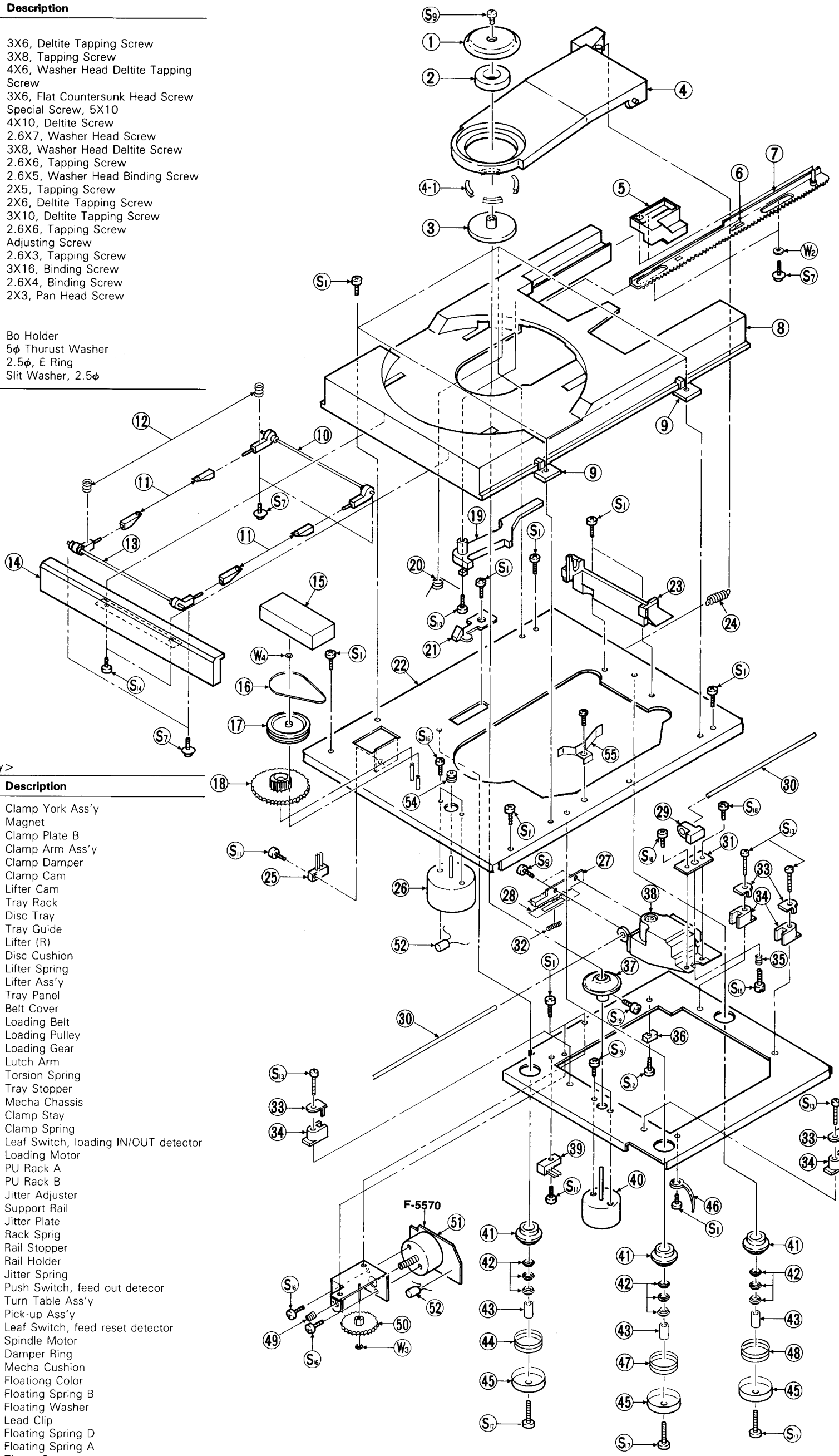
Parts No.	Stock No.	Description
1	27398300	Leg Ass'y
2	27411910	Front Panel Ass'y
4	27292700	Knob, TIMER SW.
5	47639300	Knob, PHONE Level
6	27420500	Knob, POWER SW.
7	27394600	Joint Ass'y
8	27293100	Dress Side Panel, right
9	18161901	Side Panel Ass'y, right
10	27321900	Dress Side Panel, left
11	18161801	Side Panel Ass'y, left
12	48586400	Neutrix Connector, BALANCED OUT
⚠ 13	38004700	Power Supply Cord (Polarized) (XX)
⚠	48188800	Power Supply Cord (UL, CSA)
⚠	38004500	Power Supply Cord (EU, SEV)
⚠	48837700	Power Supply Cord (XX)
⚠ 14	46504100	AC Fuse 1A
⚠ 15	15028311	Power Transformer (XX)
⚠	15028312	Power Transformer (UL)
⚠	15028315	Power Transformer (EU, SEV)
16	39106000	Strain Relief (XX)
	39104900	Strain Relief
17	18162001	Bonnet Ass'y
⚠ 19	48069600	Voltage Selector Switch (XX)
⚠	07204700	Slide Switch, Voltage Selector (EU, SEV)

Parts List <Screw & Washer>

Parts No.	Stock No.	Description
<Screw>		
S1	00461600	3X6, Deltite Tapping Screw
S2	46319800	3X8, Tapping Screw
S3	46863400	4X6, Washer Head Deltite Tapping Screw
S4	51666100	3X6, Flat Countersunk Head Screw
S5	48719700	Special Screw, 5X10
S6	00456100	4X10, Deltite Screw
S7	27283100	2.6X7, Washer Head Screw
S8	46268000	3X8, Washer Head Deltite Screw
S9	48368100	2.6X6, Tapping Screw
S10	18154100	2.6X5, Washer Head Binding Screw
S11	13303900	2X5, Tapping Screw
S12	00420600	2X6, Deltite Tapping Screw
S13	46268300	3X10, Deltite Tapping Screw
S14	48416200	2.6X6, Tapping Screw
S15	27279200	Adjusting Screw
S16	48371600	2.6X3, Tapping Screw
S17	00422400	3X16, Binding Screw
S18	00424700	2.6X4, Binding Screw
S19	48376800	2X3, Pan Head Screw
<Washer>		
W1	27290910	Bo Holder
W2	13307800	5ϕ Thurust Washer
W3	08322600	2.5ϕ, E Ring
W4	27279700	Slit Washer, 2.5ϕ

Parts List <Mechanism Ass'y>

Parts No.	Stock No.	Description
1	18162201	Clamp York Ass'y
2	48583700	Magnet
3	27278400	Clamp Plate B
4	18162301	Clamp Arm Ass'y
4-1	27280100	Clamp Damper
5	27274100	Clamp Cam
6	27274200	Lifter Cam
7	27275300	Tray Rack
8	27277300	Disc Tray
9	27274500	Tray Guide
10	27277100	Lifter (R)
11	27276500	Disc Cushion
12	27275200	Lifter Spring
13	27284800	Lifter Ass'y
14	27372400	Tray Panel
15	27304500	Belt Cover
16	27276200	Loading Belt
17	27275800	Loading Pulley
18	27275900	Loading Gear
19	27274000	Lutch Arm
20	27275100	Torsion Spring
21	27274300	Tray Stopper
22	———	Mecha Chassis
23	27280700	Clamp Stay
24	27274900	Clamp Spring
25	48574400	Leaf Switch, loading IN/OUT detector
26	48838200	Loading Motor
27	27275410	PU Rack A
28	27275500	PU Rack B
29	27278600	Jitter Adjuster
30	27276400	Support Rail
31	27278200	Jitter Plate
32	27275000	Rack Sprig
33	27334600	Rail Stopper
34	27274600	Rail Holder
35	27278700	Jitter Spring
36	48794000	Push Switch, feed out detecor
37	27283310	Turn Table Ass'y
38	18734900	Pick-up Ass'y
39	48574400	Leaf Switch, feed reset detector
40	48584900	Spindle Motor
41	27280000	Damper Ring
42	27280300	Mecha Cushion
43	27279500	Floationg Color
44	27282900	Floating Spring B
45	27274800	Floating Washer
46	13020500	Lead Clip
47	27324900	Floating Spring D
48	27282800	Floating Spring A
49	27278500	Thrust Screw
50	27275600	Sending Gear
51	18162101	Feed Motor Ass'y
52	48098600	4.7μF 25V E.B
53	———	Sub Chassis
54	27276100	5ϕ Pulley
55	27375600	Tray Press Spring



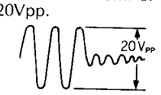
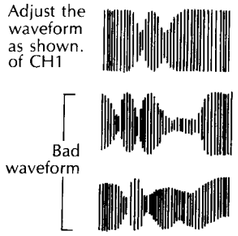
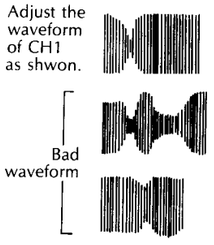
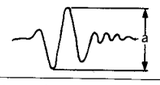
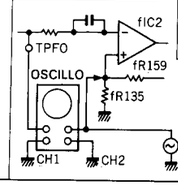
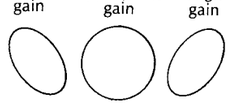
5-2. Exploded View of Mechanism Ass'y

6. ADJUSTMENTS

•NOTES ON ADJUSTMENT

1. Turn off power before removing bonnet.
2. See Fig. 9-1 for adjustment position.
3. Test discs are CD-1 of EIAJ and NR4A 410-056-2 of Philips.
4. Before adjusting the whole servo system, initially set fVR1, fVR3, fVR5 and fVR6 at their center positions and fVR2 and fVR4 to their minimum values (full counterclockwise).

6-1. Servo Circuit Adjustment

ITEM	STEP	MEASUREMENT POSITION	ADJUSTMENT POSITION	ADJUSTMENT CONTENTS	ADJUSTMENT CONDITIONS
A. VCO ADJUSTMENT	1	Connect TP04 to a frequency counter.	——	4.3218MHz ± 1kHz	1. Turn power SW on. 2. Check frequency.
	2	Connect TP CK to a frequency counter.	fFL1 (F-5686) Refer to Wiring on Page 18.	4.3218MHz ± 1kHz	1. Short between TP EFM and GND. 2. After adjustment do not short between TPEFM and GND.
B. TRACKING ADJUSTMENT	1	Connect TP TRE to CH1 and TP HF to CH2 of an oscilloscope.	fVR4 (Tracking Gain VR)	Adjust the waveform of CH1 to 20Vpp. 	1. Set the oscilloscope as follows: SWEEP: 0.5msec, CH1: 5V (DC), CH2: 2V (DC) TRIGGER: CH2, SLOPE: ⊕ DC. 2. Play 8th music of CD-1. 3. Keep FF SW depressing.
	2	Connect TP EFM to CH1 and TP KICK0 to CH2 of an oscilloscope.	fVR5 (2 Kick VR)	Adjust the waveform as shown. of CH1 	1. Set the osciloscope as follows: CH1: 0.2V (AC), CH2: 0.5V (DC), TRIGGER: CH2, SLOPE: ⊕ DC, SWEEP: 0.2msec 2. Short between TP 5V and TPK. 3. Set 16th music of CD-1. 4. Repeatedly press REW SW for 3sec and release it for 0.5sec.
	3.	Connect TP EFM to CH1 and TP KICK0 to CH2 of an oscilloscope.	fVR6 (1 Kick VR)	Adjust the waveform of CH1 as shwon. 	1. Do not short between TP 5V and TPK. 2. Repeatedly press REW SW for 3sec and release it for 0.5sec.
	4	Connect TP TRE to CH1 and TP HF to CH2 of an oscilloscope.	fVR3 (Tracking offset VR) "a" is a level at which a music begins to proceed. "b" is a level at which a music begins to return.	Adjust the waveform of CH1 symmetrical in the vertical direction. 	1. Set NR4A410-056-2. 2. Set the oscilloscope as follows: SWEEP: 0.1msec, CH1: 0.1V (DC), CH2: 2V (DC), TRIGGER: CH2, SLOPE: ⊕ DC 3. Play 15th music and adjust the waveform so as to become as shown, by hearing the sound.
C. FOCUS ADJUSTMENT	1	Connect TP FO to CH1 and TP HF to CH2 of an oscilloscope.	fVR1 (Focus offset VR)	Adjust the waveform amplitude "a" of CH1 to 0.8Vpp. 	1. Set the oscilloscope as follows: SWEEP: 0.5msec, CH1: 0.2V (DC), CH2: 0.5V (DC), TRIGGER: CH2, SLOPE: ⊕ DC 2. Set NR4A410-056-2 and play 15th music.
	2		fVR2 (Focus Gain VR)	Adjust the gain correctly. 	1. Connect test pin TPFO to CH1 of an oscilloscope. 2. Play 8th music of CD-1. 3. Connect fR135 to CH2 of the oscilloscope. Set the oscilloscope as follows: CH1: 0.2V, CH2: 0.1V, VMODE: X-Y, SWEEP: 0.2msec

6-2. Audio Section Adjustment

ITEM	STEP	MEASUREMENT POSITION	ADJUSTMENT POSITION	ADJUSTMENT CONTENTS	ADJUSTMENT CONDITIONS
Distortion factor	1	Connect an oscilloscope and a distortion meter to the output terminal.	vVF1 (F-5584) Refer to Wiring on Page 18.	Distortion should be minimized.	1. Play 5th music of the test disc CD-1. 2. Check of both CH1 and CH2.

6-3. Mechanism Adjustment

•Precaution

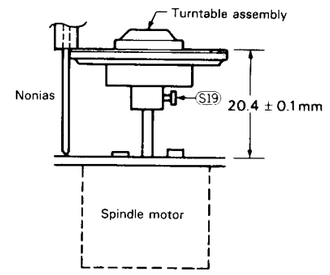
Do not touch the laser power variable resistor and adjust the diffraction grating in replacing the pickup with a new one, because these have already been adjusted.

A. Turntable height adjustment

Be sure to adjust the height whenever the spindle motor and turntable assembly have been replaced.

<HOW TO ADJUST>

1. Adjust the distance between the upper surface of the turntable and the subchassis to 20.4 ± 0.1 mm.
2. Fix them with screws ⑲ after the distance has been adjusted.



B. Jitter adjustment

•Precaution

Jitter adjustment should be made when the pickup head assembly is replaced or removed. In case the operation is not normal after the jitter adjustment, adjust the circuit simultaneously.

<HOW TO ADJUST>

1. Connect test pin TP EFM of servo control board F-5583 to an oscilloscope.
2. Adjust the eye pattern waveform to the best as shown by the adjust screw ⑮. (Refer to Set Exploded View on Page 15.)

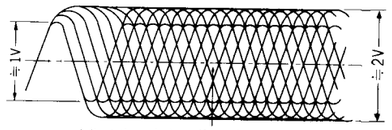
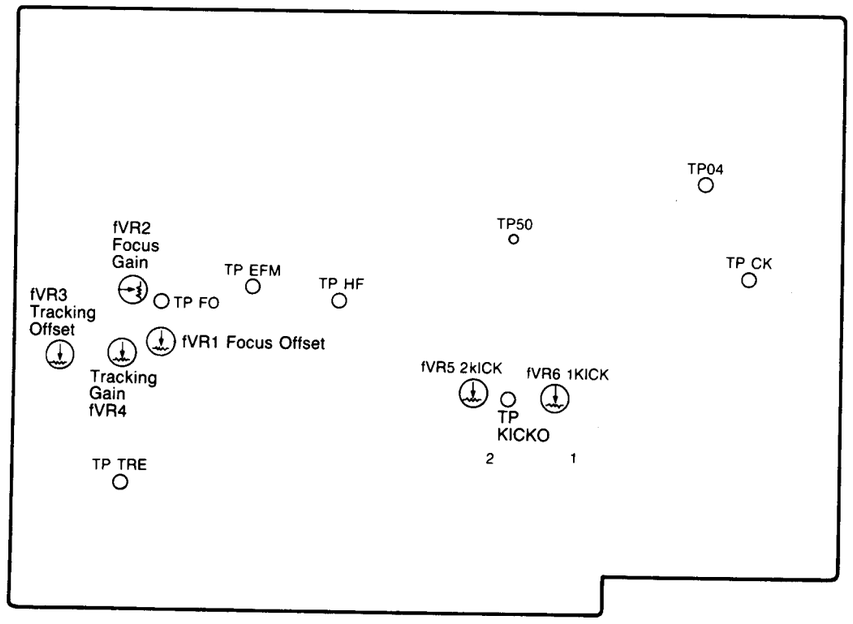
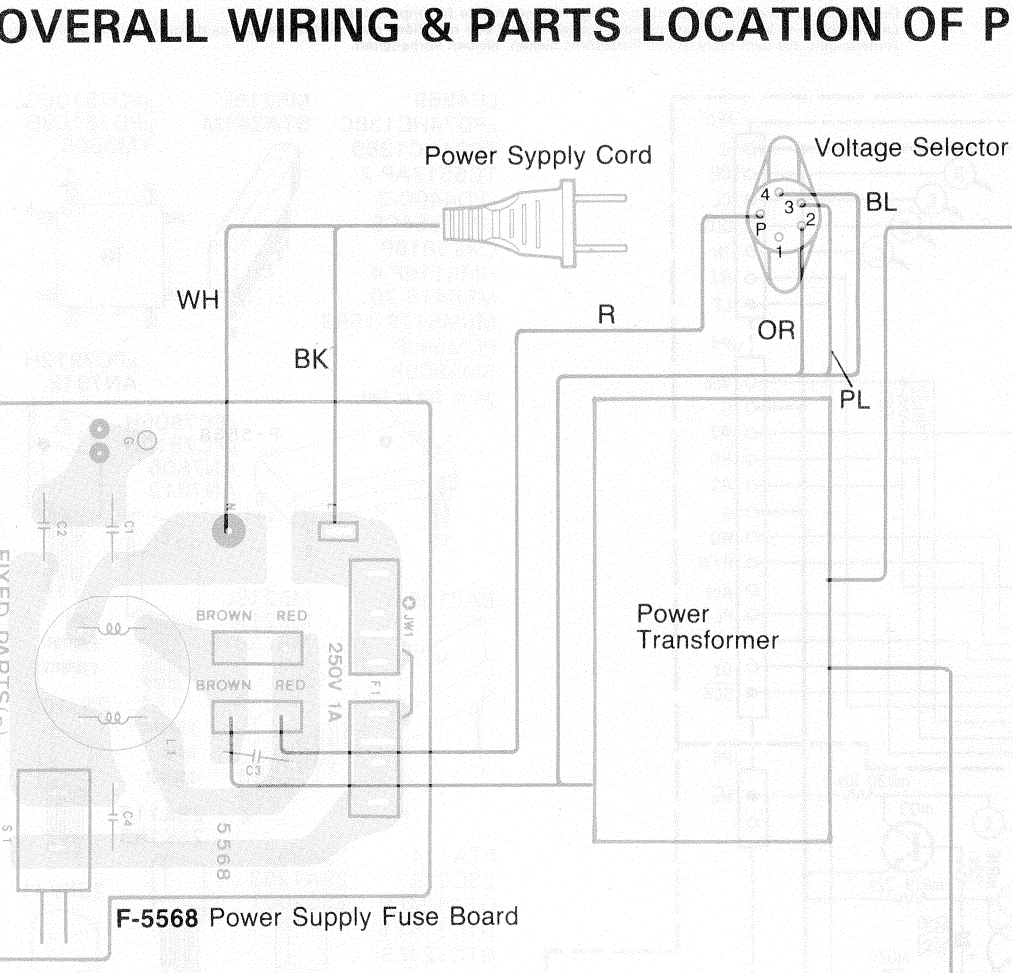
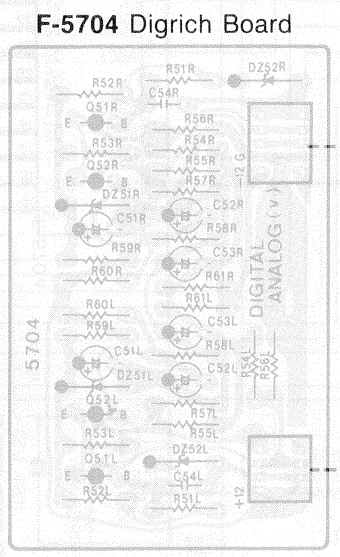


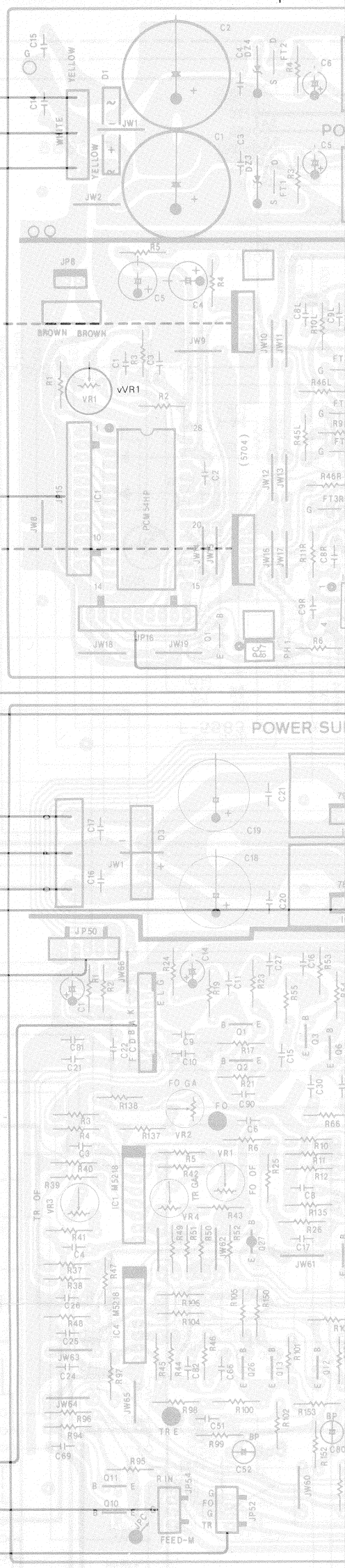
Fig. 6-1 F-5583 <Servo Control Board>

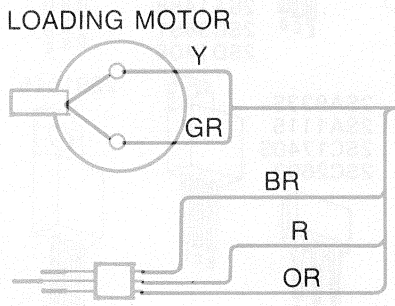


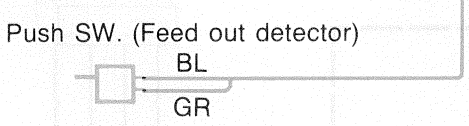
7. OVERALL WIRING & PARTS LOCATION OF PRINTED CIRCUIT BOARD

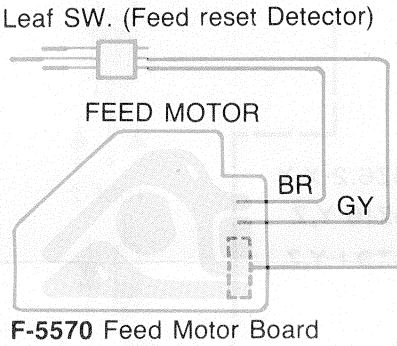


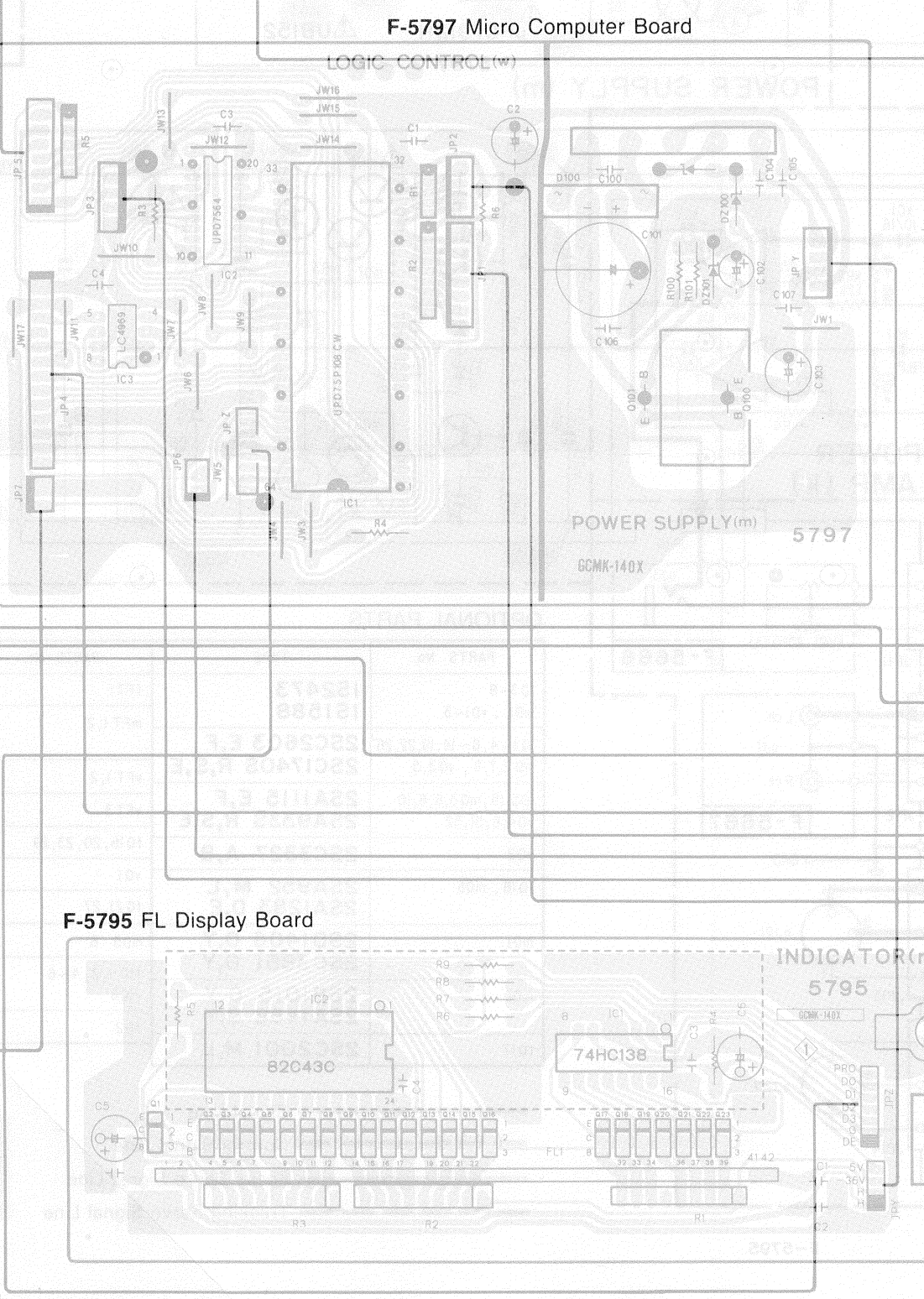


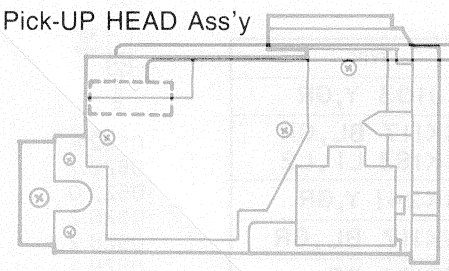


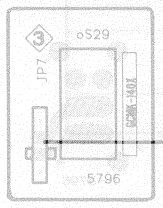


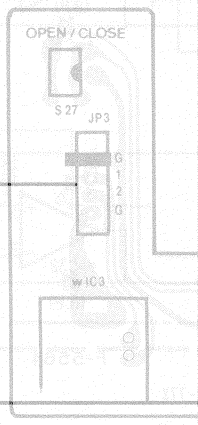












Amp. Board

F-5667 Output Terminal Board

Ground Terminal

GY
OR
WH
L. BALANCED OUT

BL
R
BL
R. BALANCED OUT

GY

BR

F-5686 Signal Management Board

F-5666 Phone Jack Board

SPINDLE MOTOR
R
GY

F-5564 Control Switch Board

8. SCHEMATIC DIAGRAM

8-1. Signal Line Section

CD MECHANISM (t)

RF / SERVO (f)

ANALOG /DIGTAL (v)

F-5584

F-5704

vDZ51 05Z9.1 Y,Z

vDZ52 05Z2.7Z , 05Z3.0X

F G H I J K

1 2 3 4 5 6 7 8

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* La présention et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
* Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.

F-5686

+12V FZC GND -12V FCS HF DM- DM+ EFM TROFF FEM+ FEM- CK FEOF KP- KP+ TRHD TRGL FRF TER

GND DEP +5V ø4 SDSY WQ R/W DOUT DIN SCK ø2 SDO

vIC5 SM5806P

JP5 G OP CL OUT IN RI LS

JP4 VDD G ø2 RO RS G WQ R/W Acc PL Do DI SCK

JP6 Mu

fC59 0.1 fR160 180k fD8 fD2 fR124 270k fR125 68k fR126 10k fIC6 fC58 0.1 fR127 39k fR128 4.7k fQ20 fQ21 fQ19 fQ29 fR123 12k fR157 10k fD6 fR122 10k fR144 1.2M fR72 680k fC47 0.001 fR134 270 fQ23 fQ22 fC65 10/50 fR133 10k fC64 1/50 fC67 100/10 mR20 10k mQ9 mR16 22k mR19 22k mC30 22/16 mDZ6 05Z11X,Y mR18 mQ10 mR19 1.2k mD2 mC31 220/25 fR132 100k

mIC3 µPC7805H mIC1 µPC7812H mIC2 µPC7912H mD3 UB152 12V 5V 20V -20V 8.6V -12V

mR13 10k mC27 220/16 mC26 0.1 mC24 220/16 mC22 0.1 mC20 0.1 mC18 2200/25 mC16 0.1 mC28 10/50 mC25 220/16 mC23 0.1 mC21 0.1 mC19 2200/25 mC17 0.1 mR12 22k mR11 4.7 mR10 220(1/2) mQ6 mQ5 mDZ2

ORANGE R/3 PURPLE S/3 ORANGE T/3

POWER SUPPLY (m)

F-5583

kC1 10/16 kIC1 kC2 100/25 kR1 47k kR2 1.2k kR3 47k kR4 10k kC3 100/25 kR5 120 (B.P) kIC1

mC12 0.1 mC10 100/25 mR6 3.9k mC8 220P mR5 1.2k mQ1 mFT1 24V mQ2 mQ7 mR3 4.7k mR7 4.7k mDZ1 mC7 47/16 mDZ3 mC5 100/25 mC3 0.1 mC1 4700/35 mC14 0.1 mD6 mD5 YELLOW J/3

mC13 0.1 mC11 100/25 mR9 4.7k mDZ5 mC29 47/16 mDZ4 mC6 100/25 mC4 0.1 mC2 4700/35 mC15 0.1 mD7 mD8 YELLOW L/3 WHITE K/3 mR8 3.9k mC9 220P mR15 1.2k mQ3 mQ8 mR4 4.7k mQ4 mFT2

12.5V -12.5V -24V

mDZ1,5 05Z6.2 X,Y
mDZ3,4 05Z16 Y,Z
mDZ2 05Z9.1 Y,Z

POWER AMP (k)

vC27 0.1 vR64 100k vRL1 vR31 47 vR41 22k vC31 10/50 vIC6 (B.P) vC30 3.3/50 vR63 100k vR39 100k vR44 220 vR43 22 vR40 100k vR38 47 vR42 22 vC28 0.1 vR66 100k vC33 10/50 vR67 100k vC32 3.3/50 vR41 vR44 vR43 vR31 vC27 vR64 vC31 vIC6 (B.P) vR63 vC30 vR40 vR38 vC28 vR66 vC33 vR67 vC32 (B.P)

JP10 oJ3 kVR1 20kΩ (A) F-5666

JP11 L ch oJ1 R ch F-5667

JP12 GND

JP13 oJ2L

JP14 oJ2R

OPTIONAL PARTS

PARTS No.	TYPE
fD3~8 mD2, vD1~3	1S2473 1S1588
fQ1~4,6~14,19,22,26 mQ2,7,9, vQ3,5	2SC2603 E,F 2SC1740S R,S,E
fQ5,15, mQ3,6,8,10 vQ4,6,51,52	2SA1115 E,F 2SA933S R,S,E
vQ2	2SC3327 A,B
fQ18, mQ5	2SA952 M,L 2SA1283 D,E
mQ1	2SD1406 O,Y 2SC3851 O,Y
mQ4	2SB1015 O,Y 2SA1488 O,Y
fQ17	2SC2001 M,L

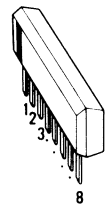
PARTS No.	TYPE
fFT1	2SJ103 Y,GR
mFT1,2	2SK117 BL,GR 2SK163 L1,L2
vFT1,2	2SK241 Y,GR
vFT3	2SK117 BL,GR
fQ16,20,23,29	DTC124 ES
vQ1	DTC114 YS
fQ21,27	DTA124 ES
mD5 8	10DF2
fIC 1,2,4~6 vIC6	M5218
fD2	MC921

Signal Line
Control Signal Line
Focus Servo Signal Line
Tracking Servo Signal Line

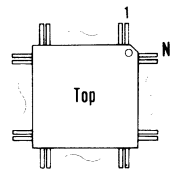
⚠ is Safety Part.
Use only replacement parts recommended by the manufacturer.

LC4969
µPD74HC138C
TC74HC1389
TC5517AP-2
µPD446C-2
µPD7564CS
CXK5816P
HM6116P-4
MB8416-20
MSM5128-15RS
PCM54JP
SM5806P

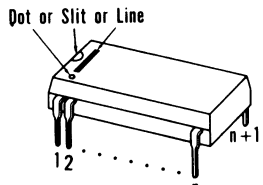
M5216L
STA341M



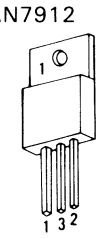
µPD75106G
µPD75108G
YM3805



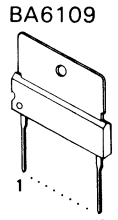
µPC7912H
AN7912



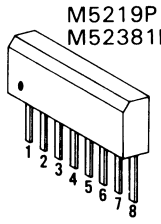
µPC7805H
µPC7812H
AN7805
AN7812

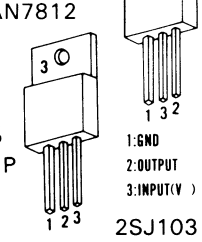


BA6109



M5218L
M5219P
M52381P





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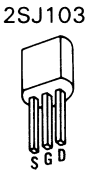
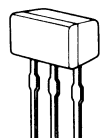


PTA114
2SC3327
DTA124ES
DTC114YS
DTC124ES



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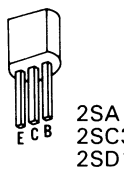
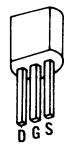
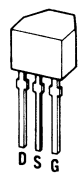
2SA1283
2SC2001



2SK117
2SK163



2SK241



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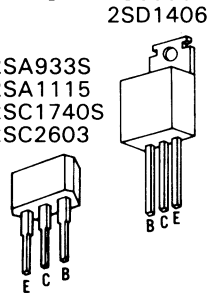
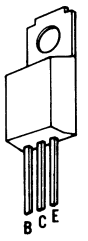
2SC3851
2SD1406

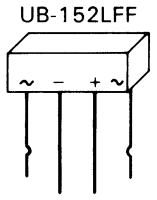


2SA933S
2SA1115
2SC1740S
2SC2603

2SB1015

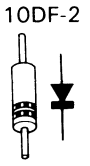


UB-152LFF



MC921

10DF-2



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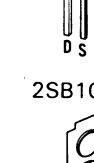
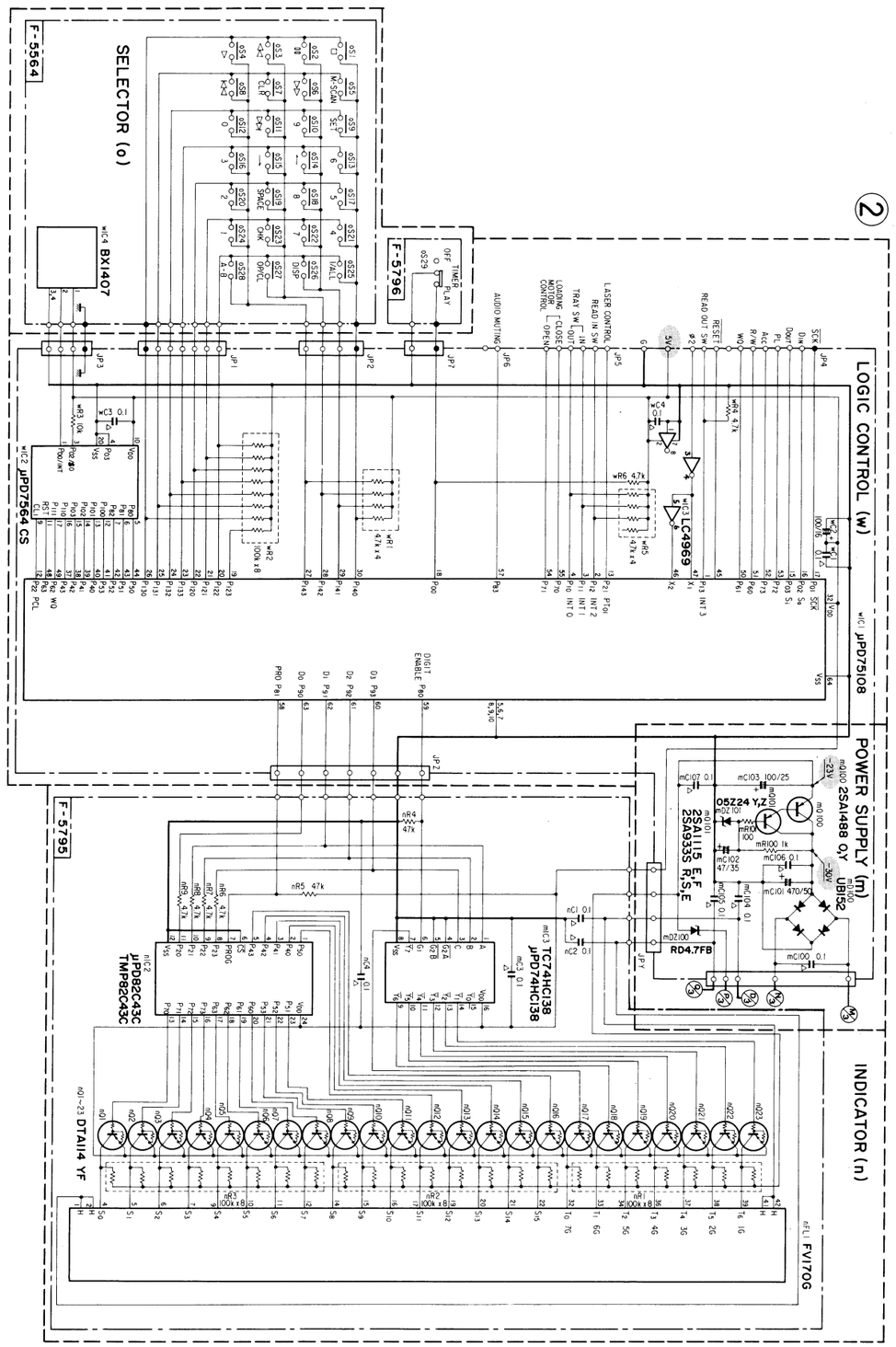
1S2473



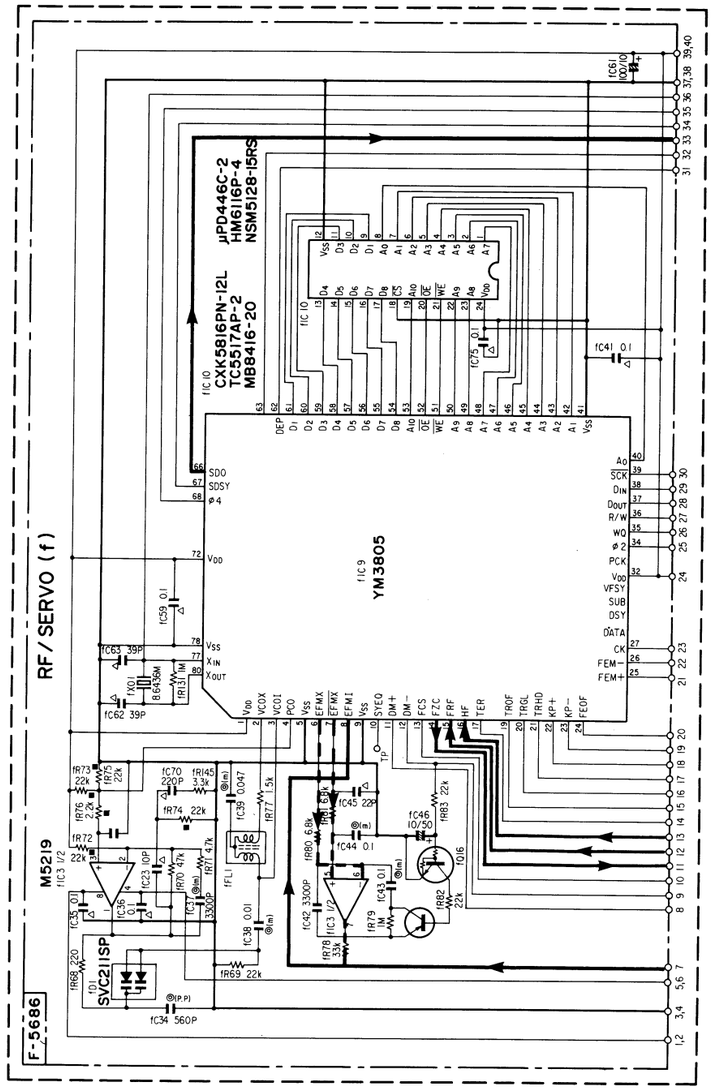
05Z24
05Z2.7
05Z3.0
05Z6.2
05Z8.2
05Z9.1
05Z11
05Z16
RD4.7F

A	B	C	D	E	F	G	H

8-2. Micro Computer & Display Section



8-3. Signal Management Section



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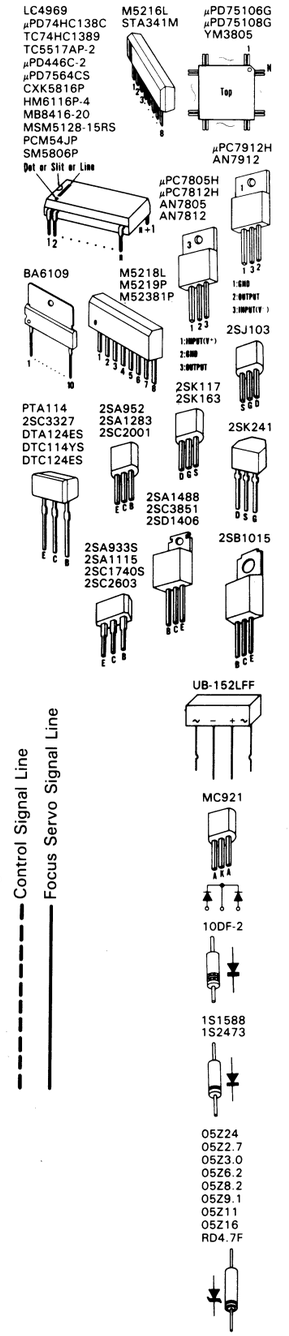
*Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.



Signal Line
Control Signal Line
Focus Servo Signal Line

SYMBOL OF FUNCTION
(f) RF/SERVO
(k) POWER AMP
(m) POWER SUPPLY
(n) INDICATOR
(o) SELECTOR
(p) FIXED PARTS
(t) CD MECHISM
(v) DIGITAL/ANALOG AMP
(w) LOGIC CONTROL

SYMBOL
△ Ceramic Capacitor
△ T Ceramic (Temperature Compensation)
(BP) Bi-Polar Electrolytic
◎ (ma) Mylar
◎ (pp) Polypropylene Film
⊗ Polystyrene
▲ Barrier Layer Capacitor
⊡ Non-inflammable Resistor
■ Metal Film Resistor
◪ Fusing Resistor

RESISTORS
Are in ohms, 1/4 Watts, ± 5% Tolerance
Unless otherwise Noted k : kΩ, M : MΩ

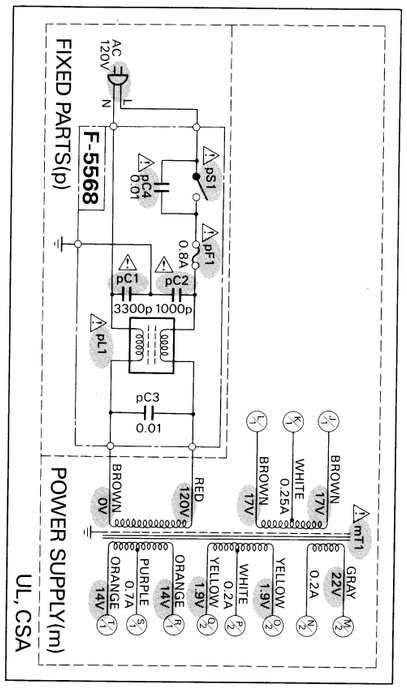
CAPACITORS
Are in µF, Unless otherwise Noted P:pF

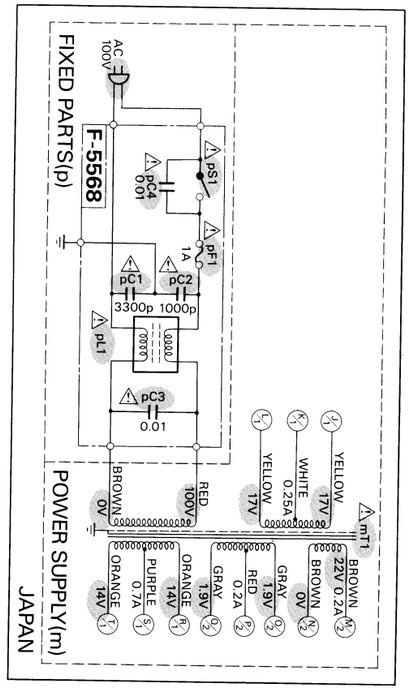
ELECTROLYTIC CAPACITORS
Capacitance (µF)/Volt (V)

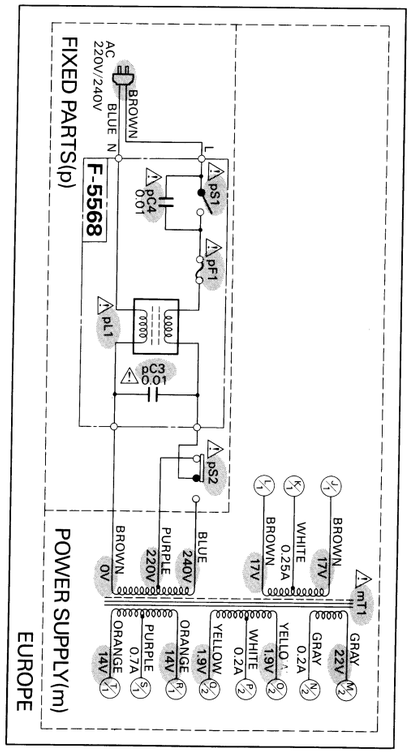
Each D.C Voltage shows the nominal value in volts at playing

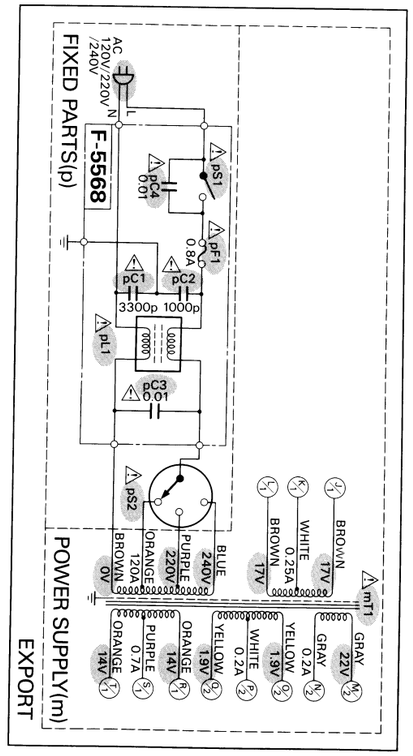
⚠ is Safety Part.
Use only replacement parts recommended by the manufacturer.

8-4. Power Supply Section









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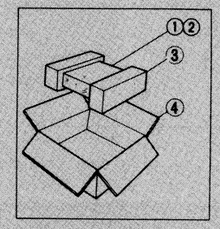
- Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.

⚠ is Safety Parts
Use only replacement parts recommended by the manufacturer.

9. PACKING LIST

Parts No.	Stock No.	Description
1	47859600	Vinyl Bag
2	27417500	Protector Sheet
3	27293500	Styrofoam Packing
4	27390100	Carton Case



10. ACCESSORY LIST

Stock No.	Description
07193400	PJP Cord
49023500	Operating Instruction (*E·F·S)
49023600	Operating Instruction (*G·I·Sw)
———	Remote Controller, RS-1010
———	Dry Battery, SUM-3K

***Note:**
E·F·S: **E**nglish·**F**rench and **S**panish Version
G·I·Sw: **G**erman·**I**talian and **Sw**edish Version

Sansui

SANSUI ELECTRIC CO., LTD.: 14-1, Izumi 2-chome, Suginami-ku, Tokyo 168 Japan
SANSUI ELECTRONICS CORPORATION: PHONE: (03) 324-8891/TELEX: 232-2076 (International Division)
1250 Valley Brook Ave. Lyndhurst, N.J. 07071 U.S.A.
17150 South Margay Ave. Carson, California 90746 U.S.A.
3036 Koapaka Street. Honolulu, Hawaii 96819 U.S.A.
SANSUI ELECTRONICS (U.K.) LTD.: Unit 10A, Lyon Industrial Estate, Rockware Avenue, Greenford, Middx UB6, OAA, England
SANSUI ELECTRONICS G.M.B.H.: Paul Ehrich Strasse 8, 6074 Rödermark 2, West Germany

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